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ORIGINAL ARTICLES.

THE BACILLUS COLI COMMUNIS: THE CONDITIONS OF ITS INVASION OF THE HUMAN BODY, AND ITS PATHOGENIC PROPERTIES.[1]

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WE owe especially to Escherich the knowledge that certain species of bacteria are regularly found in the healthy intestinal canal. Of the bacteria present in the normal feces the most abundant is the bacillus coli communis, first described by Escherich in 1885, under the name bacterium coli commune.

This bacillus presents so many points of resemblance to the typhoid bacillus that Rodet and G. Roux contend that the latter is simply a variety or modified form of the colon bacillus. There are, however, so many points of difference between these two bacilli that they must be regarded as distinct species. The typhoid bacillus is actively motile, the colon bacillus only feebly motile; the typhoid bacillus never coagulates milk, the colon bacillus coagulates it in two to seven days; the typhoid bacillus does not cause fermentation of lactose, or if at all, only in very feeble degree, while the colon bacillus actively ferments lactose. There are also differences in the appearances of the growth of the two bacilli on gelatin, agar and potato, but these are less precise and constant than the points mentioned.

Escherich demonstrated that injections of bouillon cultures of the colon bacillus into the circulation of guinea-pigs and rabbits are capable of killing the animals by acute intoxication, if sufficient quantity is injected. Smaller quantities he believed to be devoid of pathogenic power. Dr. Blachstein has published the results of a series of experiments made in my laboratory, showing that injections of one c.c., or even less, of bouillon cultures of the colon bacillus into the ear-veins of rabbits may cause the death of the animals as late as six weeks after the inoculation. These rabbits were much wasted, and presented peculiar changes in the liver and bile. The bile contained the colon bacilli in large number, at a time when they had disappeared from the blood and organs. It was thin and pale, devoid of the normal green color, and presented particles of bile pigment, necrotic epithelium, and masses of bacilli. The liver often contained necrotic foci; the spleen was atrophied.

The first observation of the colon bacillus in the tissues of the human body outside of the intestinal canal was made in 1889 by Tavel, who found this organism in the wound resulting from removal of a tumor of the thyroid gland. Since then there have been several observations of this bacillus associated with peritonitis, angio-cholitis, and some other affections. Observations of this invasion of the colon bacillus have been made by Wyss, Laruelle, Gilbert and Girode, Charrin and Roger, Naunyn, A. Fränkel, and Malvoz. Bönnecken has found the colon bacillus in the fluid of strangulated hernial sacs.

No systematic observations, however, have been published as to the frequency and conditions of invasion of this bacillus into the tissues of the human body. I have for about a year and a half been interested in observations of this character, and take this opportunity to present the most important of the results.

My first observation was in April, 1890. The case was one of acute hemorrhagic pancreatitis, with multiple fat-necroses in the meso-colon and omentum. The bile was nearly colorless, and presented a sediment containing yellow, granular bile pigment, cylindrical epithelium, and zoöglea of bacilli, reminding one of the changes in the bile observed in rabbits dying a long time after intra-venous inoculation with the colon bacilli. There existed a very acute diphtheritic colitis with superficial ulceration. In this case pure cultures of the colon bacillus were obtained from the foci of fat-necrosis, the mesenteric glands, the liver, the bile, the lungs, the spleen, and the kidneys. In this, as in all the cases, roll agar and gelatin cultures were made after thoroughly burning with a hot knife the surface of the organ at the point where the sterilized needle was inserted. The autopsy was made within one hour after death, and in general the autopsies were made in less than twelve hours after death. The colon bacillus, moreover, is not one of the bacilli that invades organs after death in the process of post-mortem decomposition.

As in this case diphtheritic and ulcerative colitis

[1] Abstract of the address of the President of the Medical and Chirurgical Faculty of Maryland, at the semi-annual meeting of this society in Rockville, Md., November 17, 1891.

existed, it seemed probable that it was the lesion of the intestinal mucosa that permitted the invasion of the colon bacillus. From this time we have made bacteriological examinations in the manner described in most of our autopsies.

We have now found the colon bacillus in one or more of the organs of the body in thirty-three autopsies out of about two hundred. (There followed in the address a brief description of these cases. Here only a summary of the principal results is given.)

The suspicion at first entertained has been abundantly confirmed, namely, that lesions of the mucous membrane of the intestine open the way for the invasion of the colon bacillus into the blood and lymphatic vessels, and thence into various organs and parts of the body. The lesion consisted in different cases of hemorrhage, ulceration, perforation, catarrhal and diphtheritic inflammation, strangulation, cancer, traumatic injury, and intestinal suture.

The bacilli were found in the blood, lungs, spleen, kidneys, peritoneum, bile-ducts, gall-bladder, liver, lymphatic glands, testicle, tonsil, brain, and wounds, varying in their distribution and number in different cases. They were found with especial frequency in the lungs and kidneys, but often also in the liver, mesenteric glands, and spleen. The number of colonies in an original tube varied from one or two to a countless number. The diagnosis of colon bacillus was never made without applying all necessary tests, and especially never without demonstrating the power of coagulating milk.

It is not to be inferred that ulceration or other lesion of the intestinal mucous membrane is necessarily associated with the invasion of the colon bacilli in sufficient number to be demonstrable by ordinary culture methods, but only that such invasion is a frequent result of the lesion.

In a number of cases colon bacilli were demonstrated by culture methods in various organs of the body without any noteworthy lesions of the organs containing them or any lesion that could reasonably be referred to their presence. This was true, for instance, in several cases of amebic dysentery. On microscopical examination the bacilli, often in clumps, readily staining with aniline dyes and even with hematoxylin, could be demonstrated inside of small bloodvessels without any alteration in the surrounding tissues. There is, therefore, no evidence that in these cases the bacilli do any harm, although it cannot be positively stated that their presence is innocuous. It is well known that human blood-serum outside of the body exerts a powerful germicidal influence upon the colon bacillus.

This class of cases, therefore, in which this bacillus appears to be a harmless invader, should make one cautious in attributing pathogenic powers to the colon bacillus, even when it is associated with definite lesions, unless it can be shown that other causes can be excluded. In the case of fat-necrosis, for instance, I do not believe that the colon bacillus was the cause of the necrosis, although both cultures and cover-slip preparations showed its presence in large number. I have subsequently made bacteriological examination of three cases of multiple fat-necrosis without finding any microörganisms in the necrotic foci.

I have suspected that the colon bacillus may be the cause of lobular pneumonia, as in several cases this organism has been found in large number and in pure culture in congested, edematous, and inflamed areas in the lungs. It has also been frequently associated with fatty degeneration of the kidneys, but neither in this nor in the pulmonary affection is there any conclusive evidence that the presence of the bacilli has done the harm.

The view that the changes in the bile noted in the case of pancreatitis already cited are referable to the colon bacillus, rests upon experimental evidence. In two cases of angio-cholitis and cholecystitis with gall-stones, the colon bacillus was very abundant, and in pure culture, in the bile. Naunyn has recently called attention to the possible relation between the formation of gall-stones in some cases and the growth of this bacillus in the biliary passages. Gilbert and Girode, as well as Charrin and Roger, refer cases of suppurative inflammation of the bile-ducts and gall-bladder to the penetration into these parts of the colon bacillus.

In cases of peritonitis due to perforation of the intestine the colon bacillus is usually found, but not always, in large number in the exudate, sometimes in pure culture. In three cases of peritonitis due to intestinal ulceration without perforation I found the colon bacillus in large number and in pure culture. The exudate was sero-fibrinous, not distinctly purulent. In these cases it seems warrantable to attribute the peritonitis to the invasion of the colon bacillus into the peritoneal cavity. In a case of ruptured tubal pregnancy the bloody fluid withdrawn by a sterilized hypodermatic syringe from the peritoneal cavity before laparotomy was performed, yielded a pure culture of the colon bacillus. There was found a perforative appendicitis. In the pus of circumscribed abscesses due to perforation of the vermiform appendix I have found the colon bacillus in nearly pure culture. It is a mistake, however, to say, as Malvoz has recently done, that all cases of peritonitis due to intestinal lesion are referable to the colon bacillus. Often enough in this class of cases the staphylococcus pyogenes aureus or the streptococcus pyogenes is present—it may be predominantly so—in the peritoneum. In a case of perforative appendi-

citis recently examined the streptococcus pyogenes seemed to be the only organism present.

In a case of ovarian abscess adherent to an ulcerated cancer of the rectum the colon bacillus was found in pure culture in the abscess.

To the occasional presence of the colon bacillus in laparotomy wounds for the extirpation of diseased Fallopian tubes and ovaries, I have already called attention on another occasion.

It is especially important to know that typhoid ulceration of the intestine opens the way for the invasion of the colon bacillus, which may be found in the mesenteric glands, lungs, liver, kidneys, and elsewhere, mixed with the typhoid bacillus. On account of the resemblance between these two species of bacilli a mistake might easily be made in identifying the colon with the typhoid bacillus, and there is reason to believe that this mistake has been made by some writers. The preservation of all its properties in these cases shows that the colon bacillus is not changed into the typhoid bacillus when it invades the organs in typhoid fever; and this is a further argument against the unwarrantable assumption of Rodet and G. Roux already mentioned.

Only in two cases have I found the colon bacillus in organs outside of the intestine without any demonstrated lesion of the alimentary canal. Although careful search was made, it is not improbable that some lesion was present, so small or of such a character as to escape observation with the naked eye.

A FEW OBSERVATIONS ON THE MYDRIATIC ALKALOIDS.

BY ROBERTS BARTHOLOW, M.D.,
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THE editor of THE MEDICAL NEWS has had an intimation from some of his readers that they desire to have some recent information on the subject of the mydriatic alkaloids, and in accordance with his suggestion, I shall seek briefly to satisfy the want.

It may be best to present a tabular statement of the source and names of the principal members of the group:

MYDRIATICS.

Atropine—Alkaloid of Atropa belladonna.
Salts of atropine:
Atropinæ sulphas;
" hydrochloras;
" hydrobromas;
" salicylas.

Atropine is supposed to be a compound alkaloid and made up of *tropeïn* and *tropic acid.*

Homatropine—A synthetical product formed by the combination of tropeïn with amygdalic acid.

Hyoscyamine—Alkaloid of Hyoscyamus niger.

Hyoscine—Alkaloid of Hyoscyamus niger; and also a synthetic or derivative alkaloid.
Salts of hyoscine:
Hyoscinæ sulphas;
" salicylas; etc.

Duboisine—Alkaloid of Duboisia myoporoides; like the others, one of the Solanaceæ.
Salts of duboisine:
Duboisinæ sulphas;
" hydrochloras.

Solanine—Alkaloid of Solanum tuberosum; the unripe fruit.

Daturine—Alkaloid of Datura stramonium.

According to Ladenburg, daturine, duboisine, and atropine are isomeric and in every way identical with hyoscyamine in chemical constitution and physiological action. If any deviation is found to exist, it is assumed to be due to a modification of the molecular arrangement and not to any fundamental change in the nature of these substances. How far molecular arrangement, and how far substitution, may modify the original powers of the medicament is a question of extraordinary interest. The first experimental work done on this subject was conceived and carried on by Prof. Fraser and Dr. Crum-Brown, of the University of Edinburgh.

They demonstrated that by substituting *ethyl* and *methyl* molecules for some of the existing molecules, the result was that the tetanizer strychnine was converted into methyl-strychnium or ethyl-strychnium, which is a paralyzer like conium or curara in respect of its action on the cord, yet in respect of its chemical relations it reacts to the same tests as strychnine. There occurred, therefore, such a substitution of molecules, that the physiological characters were changed, yet chemically the reactions were not changed.

These remarkable experiences have led to some happy combinations through molecular substitution. We owe to Prof. Ladenburg a series of important investigations, giving new light on the subject of the mydriatic alkaloids. He has shown that atropine—so long before the medical profession as a single alkaloid—is really a compound body, and is made up of *tropeïn* and *tropic acid.* By combining amygdalic acid with tropine a new synthetic product results, and is known as *homatropine.* Now homatropine has actions corresponding to atropine, and is chemically and physically similar, but the effect exerted by it differs much in degree, but not so much in kind, from its progenitor.

Homatropine is preferred to atropine for various ophthalmic purposes, chiefly because its effects on the pupil and the apparatus of accomodation are, while as complete, much shorter in duration. As

a derivative agent, therefore, as a piece of upbuilding of molecules, it has proved satisfactory.

As respects its power and range of utility, *hyoscine* is the most important of the group, and as respects the function of mydriasis it is equal to atropine, homatropine, and duboisine. The qualities that make the range of utility of hyoscine so great are its hypnotic, antispasmodic, and anesthetic powers. Hyoscyamine, its cogener, with its pain-relieving, sleep-producing, and antispasmodic properties, has had much reputation for the relief of certain kinds of nervous diseases. Of the two forms in which it is found in commerce, the amorphous seems to be the more active and curative. Hyoscyamine has visibly declined in reputation since the introduction of hyoscine, owing to the greater certainty and power of the latter. In asylum practice hyoscine has largely supplanted morphine in the treatment of acute mania, the violence of acute melancholia and of general paresis, and as a hypnotic in general. It is remarkable for the absence of after unpleasant results, such as headache, nausea, and constipation, which follow the administration of morphine and other similar agents of the narcotic group. The most experienced therapeutists have agreed on two facts of great importance as to its use, *e. g.*, as to the dose most serviceable in cases of cerebral disease requiring an anodyne; and as to muscular activity—unrest, agitation, etc., as a factor in the therapeutical diagnosis.

It has been shown by various authorities that the minimum dose is, as a rule, far more useful than massive doses, and that intense muscular activity is a condition indicating the use of such a narcotic. The dose of hyoscyamin ranges from $\frac{1}{200}$ to $\frac{1}{10}$ of a grain, and of hyoscine from $\frac{1}{800}$ to $\frac{1}{100}$. Both act favorably when given hypodermatically, and in almost all instances not more than two doses per day will be required. In suitable cases, after the administration of small doses, the sleep is quiet, refreshing, and the system remains free from the after-headache, nausea, hebetude of mind, and constipation that follow in the wake of opium and other narcotics frequently administered. It has been observed that when a dose is administered larger than that merely sufficient to cause sleep, the sleep is apt to be accompanied by jactitations, dreams, and considerable uncontrolled mental agitation. If, however, the amount given is merely adequate to cause sleep, but sleep without disturbance, the result is far happier in the condition of the mind and body.

The action of hyoscine on the muscular system is one of the purposes for which it is now much used, and by those having the largest opportunities for judging, successfully used. My personal experience is decidedly in favor of its administration in cases of *senile trembling*, *paralysis agitans* and *fibrillary agitation* In cases of *chorea*, and of various spasmodic affections of the nervous and respiratory systems, it has a useful place as a remedy.

I should not close this paper without saying something of the remarkable powers of duboisine in mental maladies of a certain kind. I have seen cases of puerperal mania yield to this when all other means had failed. It is far more effective when given by subcutaneous injection than in any other manner. The minimum dose may be given as $\frac{1}{100}$ of a grain, whilst the maximum should not exceed $\frac{1}{60}$ of a grain for adults. Although by Ladenburg considered identical with hyoscyamine, it is clear that it is not identical with it in therapeutical action. Patients experience sensations of a different kind when experiments of control are made or when trial doses are exhibited, and the objective evidences are clearly different. No chemical analysis can dispose of such facts nor can molecular modifications of structure explain the essential differences in physiological and therapeutical actions.

If I were asked to indicate where my preference lay in selecting a mydriatic for maladies mentioned below, my reply would be as follows:

For eye operations and refraction-work, homatropine.

For the treatment of eye-inflammations, atropine.

For maladies attended with insomnia, neuralgia, nervousness, various kinds of nervous trembling, as chorea, senile trembling, paralysis agitans, muscular agitation and unrest, hyoscine or hyoscyamine.

For mental diseases of a depressing kind, melancholia, etc., puerperal mania, with or without albuminuria, duboisine, hyoscine, or hyoscyamine, but especially the first named.

For acute mania, paranoia, mental disorders with much muscular agitation and frequent and protracted muscular restlessness, hyoscine or dubosine.

STRICTURE OF THE URETHRA AND ITS TREATMENT.[1]

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IT may not be necessary to give a definition of the pathological condition called stricture of the urethra; but, in order that, in speaking of treatment, I may be clearly understood, and that, in using the word stricture, my meaning may not be misapprehended, I would like to define stricture of the urethra as any unnatural narrowing of the urethra in any part of its whole length. At various times attempts have been made to demonstrate the normal

[1] Read at the meeting of the American Association of Andrology and Syphilology, held in Washington, September, 1891.

urethra as a "closed valvular chink," with certain natural or physiological widenings and narrowings in different parts of it. It seems to me that the canal should be looked upon as a living organ, supplied with muscles and nerves for the two physiological purposes of taking away from the body the urine, and of ejecting the seminal fluid. Anything in the canal, therefore, that will interfere with the proper performance of these duties, or that irritates the nerve-relations, disturbs the harmony of the organ and must be regarded as pathological or unnatural. Whether it be deformity resulting from imperfect pre-natal development or the result of post-natal disease, it occupies the same place in relation to the natural conditions of the organ. It is, then, manifest that to arrive at a clear conception of an obstructed urethra its normal state must be appreciated, and, therefore, each urethra must be studied by itself.

When a large number of urethræ are examined and compared with each other, it will be found that they all present one characteristic, not only in adults but also in infants, namely, that the portion described by anatomists as the bulbous portion is the largest in caliber, or, in other words, capable of the greatest degree of physiological distention. What the precise object of this is I am not prepared to state, but it undoubtedly has some physiological purpose in relation to the function of the urethra. From its position, shape, and muscular contractility it has seemed to me that it serves as a sort of machine for duplicating or reinforcing the action of the bladder and posterior urethra in ejecting the normal fluids. It is evidently not to be regarded as determining the caliber of the spongy portion of the urethra, for it narrows gradually (though in some individuals suddenly) to the commencement of the spongy portion, which is the barrel part, so to speak, and *its* size is the *caliber* of that urethra. Although efforts have been made to describe narrowings of the urethra in its penile portion as natural contractions, and therefore not strictures, because they are frequently found at or near the same point, from a careful study of a great many urethræ I am compelled to conclude that when present these narrowings are actually, practically, strictures in the sense in which the term is defined. In this I am confirmed by the results of treatment. Moreover, these narrowings are not found in every individual, nor in enough persons to form a rule. Over and over again I have examined urethræ that presented no narrowing of the slightest degree after the urethrometer had left the bulbous urethra and the normal physiological distensibility of the penile urethra had been determned. For example, we will suppose that the index of the urethrometer in the bulbous urethra points to the figures forty. At this number the instrument is withdrawn, say from an inch to an inch and a half, gradually being turned downward till the hand on the dial-plate indicates 32 Fr., when it is withdrawn smoothly, easily, and painlessly until it reaches the meatus, where we will say, for example, it is necessary to turn it down to 30, 28, 26, or 24, as the case may be. This urethra, then, I would regard as a normal one, provided, of course, that the posterior urethra was also found to be free from stricture. On the other hand, I have examined large numbers of patients, and have found a narrowing of varying degree in the situation claimed to be normal, say at a point two and a half or three inches from the meatus; having incised this band I have observed the symptoms to disappear, or have been enabled to cure a persistent gleet that, prior to the operation, had resisted all forms of treatment. Was this band normal or abnormal? I regard it as abnormal, and to be classed among strictures of large caliber.

Since the vigorous enunciations of Dr. Otis I think there is no difference of opinion in the minds of most genito-urinary surgeons that there is a class of strictures, chiefly to be found in the penile urethra, known as strictures of large caliber—that is to say, varying in size from 18 Fr. and upward, anything below that being classified as strictures of small caliber; and the latter may, of course, vary from the size named down to filiform, or even impassable strictures. Under some conditions of vigorous contractile quality, or under some condition of urethral irritation, strictures of large caliber may become of small caliber, and hence it is important that they should be recognized; but the majority of them rarely show a tendency to much contraction. When they give rise to symptoms, these are usually indicative of an irritant either to the mucous membrane, producing and maintaining catarrh; or to the nerves, producing various symptoms, direct or indirect.

Of course, many with stricture of large caliber may go to their graves without ever developing any symptom requiring treatment; and conversely, there may be men with symptoms of stricture of large caliber, who may have those symptoms relieved by other means than by operating upon the stricture. But by what factors is the immunity of the latter happy individual to be determined? I know of no other answer than by the good judgment that comes from large experience and careful examination of each case. Not only must the normal size of the urethra and the relative degree of contraction be determined, together with the effect of the latter upon the function of the urethra and bladder, but the pathological status of the mucous membrane must be ascertained by ocular inspection.

How important then that all fixed, arbitrary standards should be discarded, and that each urethra

should be considered and studied by itself. I, therefore, reaffirm my belief in the proportionate relation of the human urethra to the size of the penis in which it is contained, and of the necessity that only by recognizing this principle formulated by Dr. Otis can we determine how to give radical and humane treatment for an infirmity that concerns so many.

The degree to which a stricture will ultimately obstruct the urethra or interfere with its function is determined not merely by the amount of cicatricial contractile deposit caused by the original urethritis, but by the degree in which this deposit acts as an irritant to the urethral tissues. This may be learned, I think, by observation and by the results of treatment. By bearing it in mind we are enabled to make a stronger argument in favor of that means of intervention which, while it aims to relieve or cure the stricture, will irritate the fabric of the urethra in the least degree. For instance, I have seen within the urethra a nodule as large and as abruptly defined as a hazelnut, that had persisted for nearly two years, notwithstanding electrolysis and gradual dilatation, but which was entirely relieved and finally disappeared absolutely after one incision by internal urethrotomy. The deduction seems to me to be plain that the stricture began and the treatment itself kept up a sort of chronic inflammation that maintained and augmented the size of this nodule. After thorough division of the stricture, and maintenance of the separation of its sundered extremities, the functions of the urethra were performed easily, less nutriment was required by the tissues, and the abnormal growth ceased.

The part of the surgeon is not only to divide the strictures, but so far as possible to restore the healthy function of the organs. My convictions in regard to treatment may be briefly stated.

As a witness of the effects of divulsion, in regard to which considerable has of late been written, I cannot but withhold my belief in its advantages. The effect of the operation is an unknown quantity. The operator does not exactly know what he is doing. The effect of the instrument is distributed more or less beyond the strictured areas, and the resulting cicatrix is an irregular and oftentimes violently contracting one. It is non-surgical, non-scientific.

Electrolysis may be dismissed in a few words. When a current is used of sufficient strength to have any effect upon the tissues at all it acts as an irritant, produces inflammatory deposits, and the subsequent condition of that patient is worse than the first. I have had numerous patients coming to me with nodular strictures who had submitted to operations by the disciples of electrolysis and the strictures were exceedingly difficult of treatment.

Gradual dilatation is sufficient for soft, non-fibrous strictures of the posterior urethra and of those of similar pathological structure in the bulbous urethra. It is also sufficient in some of the soft, not well organized strictures in the penile urethra that are practically but simple *adhesions* (?) of the surfaces of the mucous membranes; but for organized strictures I believe that some form of urethrotomy is preferable.

For all strictures of large caliber *requiring interference* I advocate treatment by internal urethrotomy and thorough division, with as little cutting as possible, by means of an instrument that fixes and makes tense the stricture-tissue. The subject of strictures of small caliber demands closer differentiation. For simple, uncomplicated strictures, internal urethrotomy as already described is the remedy. If, however, the stricture be complicated by fistulæ, either in the penile urethra or in the perineum, or if there be indurated cicatricial deposits posterior to four and and a half inches, I would advocate external perineal urethrotomy in conjunction with internal urethrotomy. The former serves more than one purpose. It enables us to divide all stricture-tissue thoroughly and fearlessly, with a definite object in view, and enables us at the same time to abrogate the functions of the diseased urethra by draining away the urine, drop by drop, without any effort on the part of the urethra or perineal muscles. Thus physiological rest to the whole region is obtained as certainly as we obtain physiological rest for a broken limb when we put it on a splint. The process of healing is rendered a continuous and uninterrupted physiological one, without at any time becoming an inflammatory or disease process. Even in cases that have enormous, hypertrophic, indurated masses in the perineum, scrotum, and neighboring tissues—masses that are the result of tight or filiform strictures in the bulbous or membranous urethra—the effect of this drainage will be seen in the softening and gradual disappearance of these hypertrophies, sometimes before the perineal wound has begun to heal.

It seems to me that this principle of external and internal urethrotomy, combined with prolonged perineal drainage, holds good even in cases in which there are evidences of commencing renal degeneration. The result of my experience is that, when I have been obliged to take the responsibility of operating upon patients with tight strictures of the urethra, whose kidneys were in a condition of degenertion, these organs have been immediately relieved of a certain amount of "back-pressure," so to speak. They have resumed their function, as manifested by the diminution of albumin, the disappearance of casts, and by the improved general well-being of the patient. Nor do I think that the life of the patient

has been in the least degree jeopardized by the procedure indicated. On the contrary, patients whose existence would have been placed in peril by the slower process of gradual dilatation, have from the commencement of the perineal drainage shown evidences of rapid recuperation of health. The condition of the patient under these circumstances is certainly rendered perilous by the delay that of necessity is associated with the slower method. The danger is in the condition of the patient antecedent to the operation, or in the conditions that necessitate its performance, not in the operation itself.

ABSCESSES IN POTT'S DISEASE.

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IN this paper I shall limit myself to certain points in the course and treatment of Pott's abscesses that have occurred to me. An abscess, appearing in the course of the treatment of a case of spinal caries, is one of those incidents that may be considered as a conservative act of Nature in ridding itself of the detritus of a destructive process in the bodies of the vertebræ.

The symptoms vary according to the location of the abscess. With all cases there are at first associated a rise in temperature more or less persistent, loss of flesh, and particular individual symptoms according to the anatomical structures involved—for instance, dyspnea or dysphagia in retro-pharyngeal abscesses; respiratory symptoms in cervical abscess; pulmonary symptoms in upper dorsal caries; and in lower dorsal and lumbar abscesses, symptoms are developed according to the viscera pressed upon or involved. For the early recognition of abscesses I have come to depend largely upon a continued loss of appetite, loss of flesh, and continued elevation of temperature; in fact, when a child has been efficiently treated by mechanical support for the spinal caries, and for some reason is not gaining in general health, one may suspect that there is an abscess forming. In the adult, however, these symptoms are not common. Here the course of abscesses connected with spinal caries is quite different. One of the most remarkable things is the quantity of pus that may collect in a psoas abscess in an apparently healthy adult, who has but little intimation that there is spinal caries; perhaps all that has been noticed has been persistent lumbago until the patient is brought to the surgeon, who finds that the iliac fossa is filled with a resistant mass, the thigh slightly flexed and enlarged from the passage downward of the pus along the course of the psoas and iliacus muscles.

I have, in fact, come to regard spinal caries in an adult as essentially a different disease from that which occurs in a child. In adults the following group of symptoms is not at all uncommon: For a few months the patient has noticed some slight, persistent, local pain in the back, which is thought to be rheumatism. He experiences a sensation of general debility; there is slight loss of appetite, but he continues about his occupation—frequently a very laborious one, with progressive loss of flesh and persistent elevation of temperature. On physical examination no deformity in the spine can be determined, and occasionally, especially in the lumbar region, there is only slight spasm of the erector spinæ muscles; but in the iliac fossa, and down on the thigh, one may notice a large collection of pus. It is true that we may have spinal caries in a child appear very insidiously; but in an adult it is the rule, rather than the exception.

Although the appearance of an abscess in Pott's disease may be considered simply an incident of the disease, yet it is a very serious affair unless it is properly treated, and in many of our patients, in spite of all our care, it is the beginning of the end; for when an abscess opens, and sepsis occurs, unless great care is taken a fatal ending is inevitable.

The pertinent question in regard to all abscesses connected with spinal caries is: What shall be done with them? Shall they be left alone, and if so, how long? Shall they be opened, and if so, when? Formerly, as we know, these abscesses were left alone, because the mortality attending their opening was very great, but in later years we have come to regard the opening of abscesses in Pott's disease as a proper procedure under certain circumstances—and these circumstances I shall attempt to define. The surgical axiom, that wherever pus is found it should be evacuated, is not in this instance literally true, since we are all familiar with cases of abscesses in Pott's disease, that, left to themselves, and under careful mechanical and hygienic management, have in course of time become absorbed. It is true that reasoning from an individual case is, as a rule, dangerous, but I wish to relate one case that illustrates the expectant treatment of an abscess.

In 1884, an adult, J. D., twenty-four years of age, a bank-clerk in Somerville, was seen; he had been treated for a year or more for lumbago and rheumatism, but a few weeks previously he had noticed that his right thigh was enlarged and the limb flexed. He called the attention of his family physician to this, and I was asked to see the patient. On examination I found slight tenderness over the last dorsal and first lumbar vertebræ. The concavity of the right iliac fossa was filled with a dense, indistinctly fluctuating tumor. The right thigh, an inch below the groin, was six inches larger than the left, and was occupied by a fluctuating tumor. The

patient had lost some flesh, though his appetite was excellent, but he had been progressively growing worse. His condition having been explained to him, he concluded to try an efficient mechanical support for his back, and to temporize in the treatment of the abscess. A Taylor back-brace was adjusted, and the patient was instructed how to bandage the thigh with a flannel bandage to prevent the extension of the pus.

I saw this patient at various intervals during the next two years, and at the end of that time I could not detect any perceptible enlargement of the right thigh. Four years later there remained some thickening in the right iliac fossa, but the abscess had apparently been completely absorbed. At the present time he is engaged in his occupation, strong, and apparently perfectly well.

This is a case showing what can be done by expectancy. I could cite numerous instances of conditions practically similar in children that were strong and healthy, and not of a marked tuberculous diathesis, in which absorption of the abscess had occurred.

Bearing upon expectancy is the fact that these abscesses are often of long standing—that is, five, six or seven years may have elapsed since the beginning of the carious process; and the more quiescent the carious process, the better the result that may be expected from an operation.

Efficient mechanical support of the spine will in a great many cases unquestionably avoid the necessity for operative interference. My own feeling in regard to the matter is, that, until some failure begins in the patient's general condition, no operation should be thought of just so long as the patient is improving under efficient mechanical support to the spine, unless the abscess is extending in such a way that it is involving important parts—for instance, in the spine, the cord; in the thorax, the lung.

It seems far better to me to temporize until we feel assured that the abscess will not be cared for by absorption; and, again, when we do interfere, I believe in interfering most radically and efficiently; for the danger of interference in psoas abscesses is unquestionably from sepsis, and if we drain efficiently and thoroughly, and keep our wound free from septic contamination, we shall in the vast majority of cases have favorable results.

Aspiration of the abscess is an uncertain measure, for it rarely evacuates the abscess completely, because of plugging of the needle. It should be reserved for those few instances in which temporizing is being carried out, and relief to tension of the abscess is thought necessary.

The treatment by injection of the abscess-cavity after aspiration is uncertain, and when active germicides are used there is danger of systemic poisoning.

The ordinary psoas abscess, as it presents itself, forms a tumor in the iliac fossa and in the upper part of the thigh, and when expectancy has been tried and is of no further avail, I carefully prepare the patient for operation by accurately fitting a Taylor brace, or by recumbency in bed for a week or ten days. This, I have found, tends to limit the size of the abscess and to render it more readily drainable. After aspiration, to exclude the possibility of aneurism or solid tumor, a free incision, just external to the femoral vessels, is made into the substance of the presenting tumor. This is usually associated with the discharge of a large quantity of pus. An incision is then made into the most prominent portion of the swelling in the iliac fossa, care being taken that the peritoneum is avoided when one reaches the transversalis fascia and the subperitoneal fat. From this point a block-tin sound is passed as far as may be up into the abscess-track toward the spine. Direct drainage is then obtained by carefully dissecting down on the outer edge of the quadratus lumborum to the distended psoas and iliacus sheath. Usually these three openings are necessary in order to efficiently deal with the tuberculous material lining the abscess-wall. A curette and flushing are used freely, and large drainage-tubes are placed in such positions that they will efficiently drain the cavity. The incision in the iliac fossa is frequently closed by suture. Occasionally the incision into the anterior upper portion of the thigh is closed by suture, but rarely have I diminished the size of the opening which is made in the loin, from the fact that from this opening I hope to obtain direct drainage of the abscess from as near its source as is practicable. Of course, the fingers are introduced into the opening through the loin, and if any loose fragments of necrotic bone can be felt they are removed.

If the patient has a double psoas abscess I deal with both in the same manner, especially if they occur in an adult; because I have found that with double psoas abscesses it is better to drain both sides efficiently than to attempt to drain one side and then to drain the other; for, if only one side is drained, a large reservoir of pus may be left, which communicates through a small opening with the side drained, and this collection of pus is occasionally the source of systemic poisoning. If a psoas abscess is efficiently drained, the quantity of pus discharged will diminish from day to day, and, according to the size and extent of the spinal carious process, will gradually cease in a varying time.

No more depressing picture can be presented to a surgeon than to see a psoas abscess that he has opened become septic, and the patient gradually develop septicemia and die from that cause. Hence, for success in dealing with these abscesses, the most rigid antisepsis is absolutely essential.

Those unique abscesses, that for some reason do not follow the usual course, of descending in the sheath of the psoas muscle, but point posteriorly at some point on the back, are likewise dealt with by free incisions at their most prominent part, by efficient flushing, and thorough curetting.

Retro-pharyngeal abscesses, which are rare, form a group by themselves. I have seen only six, and two have been fatal. In both instances death occurred from bursting of the abscess and flooding of the lungs. Usually on introducing the finger into the posterior wall of the pharynx one can feel an elastic swelling, which may be incised by a suitably guarded knife introduced into the median line of the posterior wall of the pharynx. The "Roser position" of the head, that is, the head dependent over the end of a table, is by all odds the best, as, with a suitable mouth-gag, it gives complete and efficient control of the mouth of the patient, and the discharge of pus that takes place. With the patient in this position and efficiently held by assistants, one does not have to make a plunge in the dark, so to speak, but can thoroughly open the mouth, and can make a free incision directly into the apex of the tumor, and the discharge of pus will take place through the mouth and nostrils, and there will be no danger of suffocation from the pus entering the respiratory tract.

In the last two cases of retro-pharyngeal abscesses that I have had to deal with I made a direct incision just posterior to the right sterno-cleido-mastoid, dissecting down deliberately until I came in contact with the sheath of the main vessels of the neck. Holding these anteriorly I then entered a director or blunt probe, carefully separating the structures until I tapped the abscess laterally. In this manner I was in one instance enabled to keep the abscess sweet from beginning to end; in the other, unfortunately, the child was moribund at the time of attempting the operative interference, and my efforts were unavailing. This is a measure seemingly worthy of attention, and has been the subject of investigation by one Russian authority.

It is true that the operation for a Pott's abscess is a matter of consequence, but the dressing is of equal importance. I have come to use baked gauze, the inner layers of which are saturated with 1 : 2000 solution of corrosive sublimate, applied directly in contact with the various incisions that have been made. Over this is placed a large quantity of dry baked gauze; and I have found that assistants err in putting on too small a dressing. If it is a psoas abscess it is held in position by an efficient gauze spica-bandage. In all children great care should be taken to protect the dressing by putting on a mackintosh or oil-silk to prevent soiling by urine or feces. Usually, within twelve hours, this dressing must be changed; for from a cavity as large as the average psoas abscess an enormous quantity of sanious fluid drains away and saturates the dressing. When treated by this method the subsequent dressings remain sweet and clean for from a week to ten days at a time.

In abscesses that point in other regions than along the course of the psoas and iliac muscles, for instance on the back, where it is impossible to get directly to the bottom of the channel of pus, the cavity is tamponed with antiseptic gauze. In a retro-pharyngeal abscess when an incision is made directly behind the sterno-mastoid muscle, and the abscess-cavity is drained through this channel, a suitably-sized drainage-tube is placed in the wound, the remainder being held open by antiseptic gauze. This wound should be dressed once in twelve hours, owing to the liability of pus to collect in small pockets, and to prevent any possibility of pressure being made on the important structures of the neck. This measure should be carried out for two or three days.

In the prognosis of psoas abscesses there is an important distinction to be made between abscesses occurring early and late in the disease. In those early or *acute* abscesses that come on within the first few months of a caries of the spine, and that are associated with marked constitutional disturbance, the prognosis is not so favorable as in the late or *chronic* abscesses that occur in the disease, at the end of two, three, or more years, after the beginning of the carious process.

In acute abscesses the patient frequently succumbs to the disease in spite of all our tentative or operative efforts, whereas in chronic abscesses their evacuation by efficient drainage is simply an incident in the course of the disease.

Quite a large proportion of the cases that I have operated on for abscess in Pott's disease have recovered completely, but after a long period of time. There frequently persists for weeks and months, and in certain instances for years, a sinus, out of which is discharged a slight quantity of pus or straw-colored fluid. Frequently the mistake is made of leaving off the antiseptic dressing when the wound is reduced to this sinus, but it should be continued until all discharge has ceased. The drainage-tube should be retained until practically all of the tuberculous material has been discharged, although occasionally I feel that the tube is retained too long.

From my personal experience the following conclusions are warranted:

1. That efficient mechanical support of the spine is the prime factor in the treatment of caries of the spine associated with an abscess.

2. That under an expectant plan of treatment, the abscess will in many cases disappear.

3. That the indication for operative interference

is a steady or rapid decline in the patient's general condition.

4. That the operation should consist in thorough evacuation of the abscess, and the establishment of drainage from as near the seat of the disease as is practicable.

A CASE OF ACUTE GLANDERS OR FARCY.

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B. F. S., twenty-nine years of age, single, white, and by occupation a driver, was admitted to the hospital September 1st. His father died of pleurisy. The mother, one brother, and one sister are alive and well. The patient had always been a healthy man until six days prior to his admission to the hospital, at about which time he noticed that his right shoulder was painful and distinctly reddened. He could not remember having injured the part. He sought medical advice: a diagnosis of erysipelas was given, and iodine applied. The reddening, however, gradually increased and the part grew more painful, until at the time of his admission it had involved the anterior and posterior surfaces of the shoulder and the side of the neck.

The eruption, at this time, was erythematous, without vesicles, not punctate or marginate, but very painful. There was considerable tension about the parts and some fluctuation. The temperature constantly rose higher each morning. The evening temperature ran along the 105° line. The pulse was quick and full; the bowels constipated, with complete anorexia. The heart, liver, lungs, spleen, and kidneys failed to show any signs of organic disease. An exploratory incision into the inflamed area demonstrated the presence of but little pus.

The condition of the man grew steadily worse until, on the 8th of September, a small abscess formed at the angle of the jaw upon the right side. This single abscess was quickly followed by others, until, in the three days before his death, the entire cutaneous surface was covered. Abscesses appeared on the scalp, on the eyelids, in the nose and mouth—in fact, the palmar surfaces of the hands and the plantar surfaces of the feet were the only places exempted. These abscesses appeared first as an erythematous patch, from ¼ to ⅝ of an inch in diameter, quickly becoming indurated and soon breaking down, forming, near the center, a small pustule, which contained a single drop of pus. The pustule, when opened, disclosed at the bottom a grayish, tenacious and adherent slough, which involved more tissue than the size of the pustule would have indicated. On the scalp several pustules were so close together that when they broke down they formed a single ulcer, with this same peculiar slough at the bottom, discharging a thin, irritating, almost colorless fluid. The discharge from the nose was offensive and irritating. The irritation, which, beyond doubt, was due to these abscesses, involved the entire mucous membrane, because the discharge was as copious from the posterior nares as it was from the anterior. He constantly "hawked" and coughed, and complained bitterly of the difficulty in swallowing and the impairment of respiration.

He was at times quite conscious, but he more often displayed a mild and talkative delirium. Occasionally he tried to get out of bed, and it was thought wise to confine him; urine was constantly passed in the bed. A typical typhoid condition developed, with the dry tongue, weak, feeble, and rapid pulse, with a high temperature, which was but little influenced by antipyretics (quinine and phenacetin). He was fed and medicated by the rectum alone during the last two days of his life, owing to the total inability to swallow.

The treatment was simply symptomatic, and consisted mainly in the administration of large amounts of stimulants and quinine in large doses. He died on September 11th.

The post-mortem examination briefly showed the following:

The heart was normal, containing chicken-fat clots, evidencing the slow death. The lungs were the seat of many secondary abscesses, indiscriminately distributed and bearing marked similarity to those upon the external surfaces.

Macroscopically nothing abnormal could be discovered about the liver. The spleen was enlarged and was so friable as to be easily broken by the fingers.

The kidneys were normal.

In fact, the autopsy showed the only signs of secondary infection to be confined to the lungs.

We give the bacteriological examination of this case somewhat in detail. It was the means of verifying the clinical diagnosis, and it also shows the comparative simplicity of experimentally proving the identity of the virulent microörganism concerned.

On September 6th, by means of a sterilized Pravaz syringe, a few drops of serous fluid were obtained from the infra-clavicular region on the right side. A hanging drop examined by means of a Leitz oil-immersion $\frac{1}{12}$, ocular 4, showed moderate numbers of bacilli of about the size of tubercle bacilli. On attempting to stain cover-glass preparations with phenol-fuchsin, Löffler's blue, and gentian-violet, it was found that the bacilli did not take the stains readily, and it was only on leaving specimens in phenol-fuchsin for twenty-four hours, washing with distilled water, without after-treatment with alcohol, that fair coloring was obtained. The microscopical examination again showed bacilli, which appeared to be fully four or five times as long as wide, and in size closely resembling tubercle bacilli.

From the serous fluid, cultures were on September

6th made in beef-extract-peptone-gelatin, on beef-extract-peptone-agar-agar, and in a mixture of the two, which seems to answer admirably for cultures that are to be developed in the incubator.

The result was that in the course of three days, in the gelatin tubes, at the temperature of about 25° C., there was a decided development of small, white colonies in the line of the inoculating-needle, and near the surface, which in the course of twenty-four hours assumed a characteristic, delicate, stellate form.

This growth extended very slowly, and after a month showed a whitish surface of the non-liquefied gelatin, in the center of which, at the point of inoculation, was situated a black irregular mass. The agar-agar colonies, after three days, appeared as very small punctiform masses, growing very slowly, and not giving rise to any color. The gelatin-agar-agar colonies grew similarly to those in gelatin, with stellate arrangement, but without the black mass in the center, as noticed in the gelatin.

Successive cultures from these, both at 25° C. and at 35 C. in the incubator, in similar media, invariably resulted in identical growths. Cultures on boiled potatoes in test-tubes were prepared by inserting a piece of raw potato, cut with an apple-corer, in a sterile test-tube, in the bottom of which had been placed a short piece of glass tubing; together with 10 c.c. of sterilized distilled water, after which the plugged tubes were boiled for half an hour in the steam sterlizer, and on two subsequent days were again sterilized at a temperature of 100° C. for ten minutes. It might be added that, when properly prepared, these tubes may be kept for weeks, or even months, and are always ready for use.

Inoculations of the potatoes were made from the gelatin and agar-agar colonies; the tubes placed in the incubator at 35° C. after twenty-four hours showed the development along the track of the needle of a narrow transparent film, which acquired a yellow, honey-like appearance in the course of the next two days. This colony gradually underwent changes in color from reddish to a dark sepia, and was surrounded by a bluish-black zone, which after a month had become of a dark indigo-blue tint. The surface of the potato surrounding the colony had a distinctly bluish tinge.

Very characteristic growths were obtained by employing sweet potatoes (convolvulus batatas) as the culture-medium. These were prepared in the manner as described for ordinary potatoes.

This culture-medium, it may be stated, has also been found to be a very fertile soil for various species of microörganisms—the bacillus of anthrax, the bacillus megaterium, the bacillus of blue milk, the bacillus figurans, and the various pyogenic cocci, growing rapidly, and developing highly characteristic colonies.

Inoculations from plate-cultures that were placed in the incubator at 35° C., after twenty-four hours showed a prolific growth of honey-like colonies along the track of the needle, which in the course of a few days became dotted with minute greenish-black spots. This coloring rapidly overspread the whole infected area, gradually assuming a darker hue, which after a week resulted in nearly the whole surface of the potato becoming black.

Slides were prepared of nearly all the colonies, and the appearances in all were identical.

After a series of experiments, in which almost all the methods recommended for staining were tried, it was found that most satisfactory results were obtained by staining with Löffler's blue for twenty-four hours, rinsing with very dilute acetic acid (½ to 1 per cent.), washing thoroughly with destilled water, then with alcohol, clearing with xylol and mounting in xylol-balsam.

The bacilli were generally arranged sirgly, occasionally in pairs at right angles, or in V-shaped figures. In shape they resembled tubercle bacilli, being probably a trifle thicker but no longer than these as ordinarily seen in cover-glass preparations of tuberculous sputum.

On September 7th, some blood freshly obtained from the patient was examined. Microscopically bacilli were found as before, also a few cocci. As a matter of interest it may be mentioned that, although the blood was enclosed in a cell and examined immediately, an abnormally large number of crenated red blood-corpuscles was noted. Staining gave poor results. Plate-cultures made from the same specimen gave two kinds of colonies: some were identical with the colonies obtained from the serous fluid, while the others developed as small, round masses that gradually liquefied the gelatin surrounding them, and that on further investigation proved to be made up of the staphylococcus pyogenes aureus. Inoculation-experiments from the first-named colonies yielded results similar to those narrated.

On September 9th, a small nodular abscess on the neck was opened, and the stringy, whitish, purulent fluid was experimented with. Plate-cultures again yielded two varieties of colonies, which proved similar to those obtained from the blood. No account was taken of the number of colonies of each kind developed, but it is probable that a great many staphylococci were present, as the plates rapidly liquefied. We made no further experiments, as the evidence furnished justified us, in the present state of our knowledge concerning the etiology of acute glanders in man, to pronounce the case an undoubted one of this disease. The diagnosis based on the clinical history and bacteriological experiments was further corroborated by a statement made by a

brother of the patient a few days after the death of the latter that the patient had lately been in charge of sick horses, all of which had died. The fact that no cause for this fatal illness could be assigned is, of course, significant, as it is well known that farcy contracted by man from horses is a most virulent disease.

As the bacteriological investigation furnished no evidence of erysipelas or septicemia, which might have been suspected, these may be definitely excluded.

For permission to make this publication we are indebted to Dr. Adam Trau, in whose service at the German Hospital the case occurred.

The clinical history has been furnished by Dr. Ross, while the bacteriological experiments were carried on in the bacteriological laboratory of the hospital by Dr. Frese and Mr. Ross.

PROGNOSIS IN EPILEPSY.[1]

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THE question that always meets the physician on assuming the treatment of a case of epilepsy is the probability of ultimate recovery. It is, of course, impossible to give a positive decision in any case until we have had the patient under observation for a time; but there are certain factors that will aid us in the matter and at the same time guide us in medical treatment.

The following observations are based on the study of 342 cases that have been under the writer's direct care and 437 cases that had recovered before coming under his observation, or in which the clinical history had been furnished by the parents or friends of the patient.

Single attacks of convulsions, coincident with dentition, acute illness, or injury, have been excluded as possibly not being of a truly epileptic character.

Perhaps the most important point in judging of the probability of ultimate recovery is the age at the time of the onset of the disease. When the first attack of convulsions occurred before the third year of life, in a little more than half the children attacked they ceased before the age of puberty. Selecting 566 cases, the histories of which seem reliable, 52½ per cent. have recovered, having no spasms up to the time the history was recorded. The prognosis grows progressively graver as age advances, and when the spasms persist or begin after puberty recoveries are extremely rare, though even at that age the convulsions occasionally do cease. In my records I find only six such cases. Persistence of the convulsions is usually indicative of structural changes in the brain-substance, and mental instability or decadence will, as a rule, accompany them. When convulsions begin after injury to the head, making their appearance after the immediate effects of the accident have passed away, they are usually of grave significance, indicating that organic changes have followed the traumatism; and, unless these changes can be promptly checked by tonics and hygienic measures, recovery is hopeless.

The relation of heredity to recovery is a perplexing one, from the reluctance of the relatives to acknowledge mental imperfection or nervous disease in their family or from their inability to recognize it. In estimating the following percentages, I have omitted all cases in which the history seemed indefinite, and also those in which there was habitual drunkenness in parents or grandparents, and have included only well-defined cases of mental disorder or organic brain-disease in the ancestry.

In 273 cases in which hereditary influence was established, a little over 42 per cent. persisted, while in nearly 58 per cent. the convulsions had ceased. Of cases in which no neurotic taint was discovered, 38 per cent. recovered and 62 per cent. persisted. This result we might expect, the former class inheriting more sluggish brains, less liable to respond to irritation by convulsive explosions; while the last-named group includes more cases of traumatic origin, those originating in brain-injury received during the initial stage of the eruptive fevers, and more of those beginning during the later years of childhood or the period of rapid development that occurs between twelve and fifteen years of age. These changes are often ushered in by a period of unusual cerebral activity and precocity that is the pride and delight of the parents and too often the doom of the child.

An important point, and one not often mentioned in text-books on epilepsy, is *periodicity* of spasms. By this I mean that they will recur at very regular intervals if the patient is made to adhere to a regular course of living and the natural sequence of the convulsive attacks is not interrupted by remedies. The following cases will illustrate my meaning:

CASE I.—H. D.; spasms occurred with almost unfailing regularity every four days; he finally died of convulsions that lasted several hours, with intervals of two and a half minutes, never varying over five seconds from the expected time until a little while before death, when the intervals lengthened. Post-mortem examination revealed sclerotic changes in the left motor region. (An illustration of this case may be seen on page 45 of Dr. Osler's *Cerebral Palsies of Children.*)

CASE II.—T. D.; spasms recurring with intervals of about fourteen days and at the rate of one a day for two or three days at a time; death from menin-

[1] Read before the Association of Medical Officers of American Institutions for Idiotic and Feeble-minded Persons.

gitis. There was sclerosis of the anterior half of the right hemisphere.

CASE III.—M. C.; spasms so frequent as to make it difficult to follow this point, but at such times as they would become less frequent they would seem to follow the rule. Sclerosis of the entire right hemisphere was found at the autopsy.

CASE IV.—L. R.; attacks of spasms lasting from two to four days occurred, with intervals of about fifteen days; death was due to meningo-cerebritis. Sclerosis of the right parietal lobe and implicating the occipital was found.

CASE V.—T. L. F.; the seizures occurred at very regular intervals. There was general adhesion of the membranes to the cerebral cortex, evidently from a former attack of meningitis.

CASE VI.—J. L. B., with structural disease of the brain, finally dying from bulbar paralysis, was another marked example; his spasms usually occurred every fourth day.

CASE VII.—E. M.; the attacks took place at intervals of from six to seven days. There was sclerosis of both frontal and occipital lobes of a microcephalic brain.

The following cases illustrative of the periodicity of the epileptic seizures are at present under treatment:

CASE VIII.—W. P.; spasms were reported June 15th, 21st, 27th, July 2d, 18th, 24th. (The gap of sixteen days between July 2d and 18th may have been filled in by a night-spasm not seen by the nurse.) Again he has spasms reported for August 1st, 11th, 21st, 31st, and September 10th, when the brain-irritation seemed less intense. In this boy rapid mental decadence and the development of right hemiplegia indicated a serious brain-lesion.

CASE IX.—Similar to the foregoing, but less exact in the regularity of his attacks, is the case of T. W., in whom the spasms continued for many months with intervals of about two weeks. In his case mental failure was very rapid.

I have dwelt at considerable length upon the periodicity of the occurrence of the epileptic paroxysm, because it seems an important one in aiding us to decide whether the convulsive attacks in our patients are due to simple over-excitability of the convulsive centers, which manifests itself only when special irritative conditions may exist, or whether they are due to a definite cerebral lesion, which by its constant irritation gives rise to periodic explosions.

The intervals between the convulsive seizures can, of course, be modified by imprudence in diet, excitement of any kind, or by inhibitory remedies, such as the bromides, etc.

If the paroxysm is accompanied by mania, especially if transitory mania seem at times to replace the accustomed spasm, the prognosis is grave.

Such cases should not be confounded with those in which true convulsions appear to be replaced by short periods of excitement, which in rare cases do occur, perhaps to cease in their turn as recovery advances.

In regard to the effect of long-continued epilepsy on the intelligence of the patient, our opinion must be very guarded. A few convulsions in infancy do not appear to be always detrimental to proper mental growth. In exceptional cases they may continue for years without apparent impairment of the intellect. More often the violent disturbance of the circulation and consequent nutrition of the hemispheres, or local hemorrhages, may produce early symptoms of mental incapacity, or these may develop only after a considerable period. It is difficult to understand how the central nervous system can withstand the shock of frequent epileptic paroxysms, for any continued period, without serious impairment of its normal action, and our opinion as to the future mental condition of our patients must either be given with caution or be for a time withheld.

A HINT TO THE LITERARY MEN OF THE PROFESSION.

BY CHARLES PERRY FISHER,
LIBRARIAN OF THE COLLEGE OF PHYSICIANS OF PHILADELPHIA.

I HAVE been induced to write the following from the frequent loss, both of time and patience, that as a librarian I have seen occur to many literary men of the medical profession. I take the liberty to offer a few suggestions—rules, if you will—that would occasion no additional trouble, and, if adopted, would be of great assistance and a saving of labor to all. I refer to the inaccuracy and want of regularity in making and quoting references.

In the first place, if possible, all authors should verify any reference that they wish to quote. As is very well known, a great many writers do not take the trouble to do this. I have frequently had shown to me by the more careful authors, errors in references that they wish to quote, that have been used over and over again by numerous writers, running back for many years; in one case the original was over two hundred years old, and had been quoted perhaps fifty times, and yet it was quite evident that not one had cared to take the time to seek the original. Surely what an author thinks of sufficient value to incorporate in his work should be worth both the time and trouble to verify.

In the second place, I would call attention to the desirability, in making a reference from a book or monograph, of giving the name of the author, with his initials, place of publication, date, volume—if more than one—and page. For instance: "Bell, B., Syst. of Surgery, Edin. 1791, vol. iii, p. 16;" not, as is the custom of many writers, "Bell's Surgery, vol. iii, p. 16." When making a reference

to a journal, the writer should give an accurate copy of the title, place of publication—when not included in the title—date, volume, and page. The custom of using the editor's name in quoting a journal is very objectionable. For example:

"Hays's Journal" for "Amer. Journal of the Med. Sciences."

"Chapman's Journal" for "Phila. Journal of the Med. Sciences."

"Foster's Journal" for "Journal of Physiology, London."

"Magendie's Journal" for "Journal de Physiologie, Berlin."

"Langenbeck's Archiv" for "Archiv f. klin. Chirurgie, Leipzig."

"Sajous's Annual" for "Annual of the Univ. Med. Sciences, Phila."

An editor may have been so long connected with a journal, and be so well known by his writings or otherwise, that his friends may in a complimentary way associate his name with the title of the publication with which he is concerned; but such usage is certainly incorrect and misleading. How many of the younger men of to-day in France, Germany, or even in the United States, meeting with a reference to "Chapman's Journal," would know its title, or even that it was published in Philadelphia? In all the better catalogues a reference is given to the editor's name, of course; but it must be remembered that a large number of readers have not access to such catalogues.

Another form of quoting titles, even worse than the foregoing—for one will not often find a cross-reference of the kind in catalogues—is that of transposing or dropping a word from the title; as—

"Brooklyn Annals" for "Annals of Surgery, Brooklyn."

"N. Y. Record" for "Medical Record, N. Y."

"Zeits. für Chirurgie" for "Deutsche Zeits. f. Chirurgie."

Even the single word "Centralblatt" is sometimes used, the reader being left to discover the journal referred to (there are six or seven "Centralblatts") by the subject of the paper.

The foregoing suggestions with regard to journals are just as applicable to Reports, Proceedings, and Transactions. In fact, whenever a title is quoted, let it be an exact copy of the title-page, abbreviated if necessary.

In conclusion, I would repeat what I have said in the beginning: the adoption of these suggestions will cause little or no additional trouble to writers, and will save much time and labor to many readers. I have no doubt that a great many readers will say there is nothing new in what I have stated, and that authors know how to make references; this may all be true, but I know that the "workers" will agree with me, that, although they may have such knowledge, they too frequently fail to apply it.

ORIGINAL LECTURE.

MELANCHOLIA: ITS DIAGNOSIS AND TREATMENT AT HOME.

A Clinical Lecture
Delivered at the New York Polyclinic.

BY W. B. PRITCHARD, M.D.,
LECTURER ON MENTAL AND NERVOUS DISEASES.

GENTLEMEN: The clinic of to-day illustrates the most common type of mental disease that in general practice you will be called upon to treat. The three patients before you are examples of the condition of mental disease known as melancholia. Each of the three represents a different variety of the affection, and yet, happily, the essential identity of the three cases is quite evident. You will recall the fact that in a recent lecture I gave you a classification of insanities, with a sub-group of melancholias, practically limited to three forms: Simple melancholia; melancholia with stupor, or, in its profound form, melancholia attonita; and finally, melancholia agitata. The disease being established, the condition is one that is ordinarily easily recognized. It must not be forgotten, however, that cases of general paresis and other forms of organic insanity may present an initial stage of symptomatic melancholia. As distinguished from mania, this is a condition of mental depression, or, as Bevan Lewis has expressed it, a mental state characterized by "a rise in subject-consciousness and a loss in object-consciousness." Cerebration and mental life are dominated, to a greater or less degree, by an exaggerated tendency to introspection, and a morbid exaltation of the *ego*. As in other forms of insanity, there may or may not be illusions, hallucinations, or delusions. There are emotional disturbances of the nature of depression, representing mental or psychical pain. There may be, and usually is, impaired will-power, and in all cases there is danger of the development of a morbid propensity to self-destruction. Illusions are relatively rare; hallucinations are less so and are frequently of the auditory variety. These patients "hear voices," for example. Delusions are exceedingly common in the agitated and the stuporous forms of melancholia, and are often found in the simpler cases. I have found visceral delusions especially common. A patient "has lost his stomach," "the liver is rotten," "the blood has dried up," "the body is dead," etc.; or the delusion may be purely psychic: a terrible calamity is about to befall a patient or some one of the household. The delusion may be one of suspicion: the patient's friends wish him out of the way; they are trying to poison him, or to get possession of his property. Or the patient may be utterly depressed, in the depths of abject despair, through some imagined act done in gross violation of the laws of God and man. Punishment is constantly impending in this world, and there is an inevitable hell in the next. Such patients are said to have "the delusion of the unpardonable sin," and such a delusion involves a degree of mental torture that not even hell can rival. It is small wonder that, if uncontrolled, such

patients, as a grateful release, put an end to their lives. Certain of these mental perversions give origin to other symptoms: A delusion of poisoned food will cause a patient to refuse to eat to the point of actual starvation. Fear of an impending calamity will cause loss of sleep, the patient fearing that death will overtake him before he wakes, or that the house will burn down, or the walls fall in. Insomnia, by the way, as has been pointed out by Dr. Landon Carter Gray, is a symptom of great value in these cases, especially in the simpler forms. He has also called attention to another symptom, very common and of much diagnostic importance in such cases, a post-cervical or occipital ache or pain. I have found these two symptoms, insomnia and a post-cervical ache, pain, or other discomfort, in fully 95 per cent. of all cases observed. In the stuporous form of the disease, especially melancholia attonita, the cerebral reflexes are so obtunded that it is difficult to get an intelligent appreciation of a question or even an answer at all. Such patients will often show the presence of this pain by attempts to rest the head, or by repeatedly clasping the hands back of the neck.

To sum up, you have as symptoms of melancholia, a state of more or less profound and unreasonable mental despondency, with emotional disturbance, impaired will-power, morbid propensity (suicidal tendencies), with or without hallucinations and delusions, and with an obstinate insomnia and a post-cervical ache or pain. There are other inconstant physical symptoms in body-wasting, a sallow, dry skin, coated tongue, obstinate constipation, in women amenorrhea, etc., but these are not diagnostic or of value except by association. A peculiar pulse-rate, running up to 110, 120, or 130, is quite common, however, and is worthy of special mention. It is especially noticeable in stuporous melancholia and in that agitated, agonized form in which is found the "delusion of precordial fear."

Let us see how our patients here fit into these symptom picture-frames. The history of the first patient is as follows:

Miss D., aged twenty-four years, native of Ireland and employed as a domestic, was seen by me at her sister's home in September last. I found her crying, and she did not want to see me, insisting that she was not sick and did not need a physician, but a priest, to whom she desired to make confession of something she had done that was terribly wrong. She said she was to be punished by the law for her misdeeds and that I was an agent of the judge, sent to secure evidence to be used against her at her approaching trial. She hoped, but did not believe, that the priest could give her absolution, so grievous had been her offence. She would like to die, she said, but for the fact that she would go straight to hell. There were other delusions, but these are sufficient. I could not establish the presence of hallucinations. The patient's manner was one of intense emotional agitation of a subdued character. She was sad-visaged and anxious, crying quietly most of the time, often walking up and down the room, wringing her hands. From the sister I learned that there was no ancestral insanity and that no known cause existed for her condition. The patient had always been of a retiring, shy disposition. For two or three weeks previously to my visit she had slept badly, had lost her appetite, and her general health had run down. However, nothing was noted as wrong with her mentally except much nervousness, until two or three days before my visit, when she had been found crying in her room at night, unable to sleep, and with the delusions mentioned. At no time had she complained of her head. Under treatment she has improved, until now, ten or twelve weeks later, she is quiet, as you see—rather unnaturally so. Her skin has cleared up, her constipation has been relieved, and she sleeps well, though still dependent on hypnotics. Her delusions have almost entirely disappeared during the past three weeks, and but for the fact that she shows a rather too intense desire to go to church and confession on every possible occasion, she might be pronounced entirely free from delusions. She is, at times, somewhat emotional, cries rather easily, and likes to be alone, showing a condition of mental hyperesthesia, so to speak. Her principal complaint, however, at this time, is of a constant *headache*, located in the *occipital* region. She is not by any means well yet, and even after recovery there will be danger of a relapse if she is not carefully watched. Here you have a history quite typically illustrative of what was, when I first saw it and for some time subsequently, a case of melancholia agitata, but which, as you see it to-day, presents the picture of a simple melancholia, affording an example of that to which I have called your attention before —*i. e.*, a transition in the symptom picture from one type to another. The treatment in this patient's case was carried out at home. The sister was carefully warned of the danger of suicide, and of the necessity for constant watchfulness. The fact that this patient has never made any attempt at self-destruction is no evidence that the warning was not required, but is rather proof of the good results of its observance. The insomnia was the most conspicuous feature demanding immediate attention and to overcome it sulfonal was used in doses of fifteen grains, in milk, at bedtime. It is a very reliable, pure hypnotic, but cannot be used with advantage in certain cases because of its effect upon the circulation, depressing the heart's action. I have twice seen cyanosis and partial heart-failure from its use in moderate doses. You can combine with it, as I did in this instance, sodium or potassium bromide, though the bromides must also be carefully watched lest they add to the depression. For the general condition, I gave opium in the form of an aqueous extract, in tablets of one-fourth grain each, at first three times daily and now twice. The use of this preparation was first suggested by Dr. Gray, as having almost specific properties in melancholia. I sometimes combine with it the extract of cannabis Indica (English), in doses of one-fourth to one-third of a grain. Cannabis Indica seems to prove especially beneficial in the hypochondriacal forms of simple melancholia, with visceral delusions (hypochondriacal melancholia of Savage and others). Extract of malt for the promotion of nutrition, elixir of calisaya as an appetizer, and extract of cascara sagrada as a laxative, constituted the remaining therapeutic measures. This patient will remain under treatment for three or four weeks longer and even then she will have made a comparatively prompt recovery, the duration of such cases being from eight or ten weeks to a year or longer.

This second patient comes to the clinic for the first time to-day. She tells me that she is a widow, that she is

thirty-seven years old, that she was married seventeen years ago, and that she has four children. There is no insanity or other hereditary affection in her family history. She is, as you see, of robust physique and the picture of physical health. She comes to us for relief, she says, from obstinate headache and great nervousness, assuming the form of a constant dread that something terrible is going to happen. Her head began to trouble her five years ago, at which time also her nervous system was badly out of order, as it also is at present. She was at that time nursing a six-weeks-old baby, and attributes her symptoms to a sudden suppression of milk. "Her milk went to her head." At that time she slept badly. All her symptoms, however, improved and gradually disappeared until some four months ago. About that time her husband left home, ostensibly to attend to a business transaction in a neighboring street, and a few days later his body was found in the bay; it was supposed that he committed suicide. The shock brought back all our patient's symptoms in a more aggravated form than ever before. She cannot now sleep more than three—rarely four—hours in the twenty-four, and she has terrifying dreams when she does sleep. She is always sad and almost constantly in tears, crying, as she expresses it, for little or nothing. Her head aches all the time. It is of pain in the *back of her head* and *upper part of the neck* that she complains. She is in constant dread of some terrible calamity, and is also afraid she will take her own life. When asked if she has ever attempted suicide, she answers, with a suggestiveness to which I call your attention, "Not yet." When spoken to about her husband's death, she shows a bitterness which is utterly unreasonable. She "will never forgive him for having taken his own life—he had no right to do it." He left her a good business and a $2000 life-insurance policy, which she had much trouble in collecting, but which she admits that she finally got; but she still insists that he has treated her and his children "with unpardonable injustice." She has no hallucinations that I can discover, and there are no other delusions than those of fear and of her husband's injustice. The case, gentlemen, is one of simple melancholia, with a relapse brought on by the shock of her husband's tragic death. Under treatment the patient should make a good recovery. The duration of treatment in this case may be two months, or it may be six. She will be given the aqueous extract of opium, gr. ¼, t. d. At bedtime she will be given either thirty grains of chloralamid, a most excellent hypnotic, or twenty grains of sulfonal. For the headaches, we shall use galvanism, the positive pole over the nape of the neck, the negative over the forehead. Both electrodes should be of good size. The dose of electricity will be from one and a half to three or four milliampères, for five minutes, three times a week. In some of these cases it affords astonishingly rapid and complete relief. Occasional doses of the bromides may be required, and precautions must be observed to prevent suicide, which, however, will show a tendency to diminish in a direct ratio with recovery of sleep. You will have opportunity to see the further progress of the case at a future clinic.

The third patient, this young man, some of you, perhaps, remember to have seen some three months ago. Those of you who do remember his former appearance before the class at that time are doubtless not a little surprised at his changed appearance to-day. His case is a most interesting one. His history, as written when I first saw him, is as follows: H. M., nineteen years of age, a barber, is the oldest of three children. The second child is a stutterer, the youngest is an epileptic. The father is, and has been for years, grossly alcoholic, and is of a vicious, quarrelsome temperament. The mother is subject to attacks of major hysteria. This patient was a frequent victim of his father's alcoholic wrath and was repeatedly driven violently from home into the streets. He formed bad habits and became addicted to excessive sexual debauches. He worked away from home, and his parents saw little of him for some time previous to his attack. Nothing of value as to the primary onset of his trouble can be determined. The parents first knew of it through a note from the patient, dated in jail, to which he had been committed for attempted suicide, a policeman having fished him out of the river, into which he had jumped from a ferry-boat. He was brought home by his parents, and was under other treatment for two weeks or more before I saw him, having in this time made two attempts at self-destruction, once by swallowing sulphur match-heads, and again by attempting to jump from the window. When brought to me his condition was one of purely automatic existence. His expression was that of fixed despair. He stood in the room until gently pushed into a chair, and refused to answer a question or speak a single word during the entire visit. For several days he had not spoken a word. His eyes would fill with tears occasionally as I talked with his mother about his condition. He acted like one stunned or shocked. His mother stated that he would not eat, that he would not bathe, or dress himself when undressed, and that he passed water only when it overflowed, the patient not showing any conscious knowledge of the act at all. He would lie awake all night, his eyes wide open and fixed upon the wall, at times crying silently. There was most obstinate constipation, the tongue was coated, the skin muddy and dry, the breath foul. Recognizing in his physical condition the basis for the term melancholia—Μέλας, "black," and Χολή, "bile,"—as used by the originators of the word, I put this patient on large doses (twenty drops) of dilute nitro-muriatic acid t. d., adding strychnine gr. $\frac{1}{30}$, to each dose. I gave him twenty grains of sulfonal at night, and put him on the aqueous extract of opium, gr. ¼, four times daily. He was fed mechanically at first, after which he began to eat a little voluntarily. Galvanism to the brain was used and also to the spine—the latter, I confess, somewhat empirically. The patient emerged from a melancholia attonita and, indeed, from a condition very much like katatonia (Kohlbaum, Spitzka—a form of melancholia with stupor, catalepsy, and a tendency to repeat again and again the same words or sentences, known as "verbigeration") into a case of melancholia with stupor and thence to recovery, which is, as you may see for yourselves, perfect. This patient had illusions, hallucinations, and delusions. He would falsely interpret centrally an external object that really existed. His illusions were optical and auditory: a shadow on the wall was "a man after him;" the sound of a pump in the cellar was interpreted as his death-knell;" later on, the sound made by moving his joints, the

"cracking" we all hear at times, especially in "loose-jointed" people, he interpreted as that of a "hinge" or a foreign body in his ankle. He heard voices in a medium of absolute silence, an auditory hallucination, a false *central conception* of something having no real existence externally. His illusions and hallucinations became fixed ideas—*i. e.*, delusions. These were particularly conspicuous of the viscera. His cerebral reflexes were so exceedingly dulled that I could not determine the presence or absence of occipital or post-cervical headaches. Later, as he got better, he complained of them, though not as being severe. This young man in spite of bad heredity—which, by the way, does not in such cases necessarily mean a bad prognosis—has made a most excellent recovery. He is bright and intelligent, and, after the lecture, you will find it of interest to get from him his recollections of his sensations and impressions while in his stuporous state.

Here then, gentlemen, you have three cases illustrating as many types of the same disease, melancholia, the last case being one of melancholia with stupor, or melancholia attonita, a more profound degree of the first. The points of special emphasis are, first, as to diagnosis and particularly as to the diagnostic value and constancy of a post-cervical or occipital ache, and insomnia in association with unreasonable mental depression, as evidence of the simpler forms of the disease or the primary stages of all forms. These three conditions being present, you should be on your guard against suicide, a source of danger in *all* cases not capable of exaggeration. The favorable prognosis under proper treatment to be given in the majority of cases of melancholia is also illustrated in our clinic to-day. A final point for emphasis is with regard to the value of the aqueous extract of opium as a quasi-specific, and as to cerebral galvanism, that not only often quickly relieves the headaches, but very greatly ameliorates the state of mental depression and dependency.

HOSPITAL NOTE.

RESULTS OF THE ANTIPYRETIC TREATMENT OF ENTERIC FEVER BY MEANS OF COLD WATER EXTERNALLY.

BY E. C. ELLETT, M.D.,
RESIDENT PHYSICIAN IN ST. AGNES'S HOSPITAL, PHILADELPHIA.

[SERVICE OF JOHN K. MITCHELL, M.D.]

SINCE the antipyretic treatment of enteric fever by means of the cold bath was brought into prominence in Philadelphia by Dr. Wilson it has been pretty thoroughly tested in most of the hospitals in the city, and all seem to have agreed as to its many advantages. Dr. Wilson's well-known article (THE MEDICAL NEWS, December 6, 1890) shows a large percentage in favor of this plan as pursued at the German Hospital compared with the methods of treatment then in vogue at the other institutions in the city. The method advocated by Dr. Wilson is the Brand treatment, or strict cold bathing. The plan pursued in the treatment of the cases here presented was rather what Dr. Wilson calls the "antipyretic treatment," with the addition of drugs to meet other symptoms. The results are very gratifying as having reduced the mortality in this institution to 18 per cent. less than it was for the portion of the present year from January 1st to August 1st.

The mortality of enteric fever in this hospital since it was opened in April, 1888, has been somewhat above the average. For the year 1889 the death-rate was 10.5 per cent.; for 1890 it was 26.6 per cent. From January 1, 1891, to August 1, 1891, it was 24.7 per cent. By comparing the results in the following cases with the preceding figures a better idea can be gained of what the cold-water treatment has done, than by a comparison with the statistics of other institutions. Hospital statistics regarding the disease under consideration are notoriously misleading, but by such comparison tolerably credible conclusions may be drawn. It should be remembered, however, that the number of patients treated is very small to deduce generalizations from.

The cases here presented were treated during Dr. John K. Mitchell's term of service, in part of which Dr. C. W. Burr was his substitute, and to them I owe thanks for permission to publish this report.

The total number treated was thirty-one, in the months of August, September, and October of this year. Of these we lost two, giving a mortality of 6.5 per cent., which contrasts favorably with the figures above quoted. The disease was of average severity, quite severe in several cases, and well marked in all. Eight of the patients suffered relapses, none of which proved fatal. Two cases of intestinal hemorrhage occurred, but both recovered. One had hemorrhages before admission, and this was one of the patients that died. One case was complicated with acute laryngitis, but this was promptly cured. In no case did bedsores appear, this being probably due to the cleanliness attendant on frequent bathing, the healthy action of the skin thereby promoted, and the rest afforded by the bath to parts ordinarily subjected to pressure. The maximum number of baths given to one patient was sixty-five, the minimum one. The patients were mostly young adults—nineteen males and twelve females. One boy of five and another of eight were among the number. The classical symptoms of the disease were well marked in all, except that constipation presented more frequently than diarrhea. No fixed rule was observed regarding the degree of pyrexia that should indicate the bath, but generally it was given when the thermometer registered 103° F., and for the last month 102.4° F. was usually the signal. The peculiarities of each case were always considered when determining this point, thus treating the person rather than the disease.

The method of applying the bath was as follows: A portable bathtub was filled with water at the temperature at which it came from the faucet, cooled with ice during the hottest days, and warmed as the weather grew cooler, to about 70° F. This tub was rolled into the ward beside the patient's bed, and without exertion on his part he was then lifted into the bath. A cloth wet with cold water was then applied to the head, and the bath continued until the temperature fell to about 100° F. The patient was then lifted on to a blanket and wrapped in it a few minutes, until dry, when he was changed back to bed-dress and sheets. Each bath was followed by a small dose of whiskey.

The average time occupied in thus reducing the tem-

perature was about twenty minutes. Ten minutes often sufficed, while in some instances it had to be prolonged to an hour or more. Especially was this true when the temperature was over 104° F. on going into the bath. The patients, as a rule, took kindly to the bath, and while rebelling at the first one or two, soon found that the subsequent relief was ample recompense for the temporary discomfort. Marked asthenia contra-indicated the bath, and existed in but two cases, both of which recovered. Only once did intestinal hemorrhage coexist with hyperpyrexia, and then the cold pack was substituted for the bath with gratifying results. In several cases, as before mentioned, the bath was resorted to but once, the temperature remaining within reasonable limits after that. It was in these cases that the most striking effects of the treatment were seen, an artificial crisis being induced. The patient put in the tub with high temperature, dry skin, brown dry tongue, flushed face, dull expression and muttering, slept after the bath, to awaken refreshed, with cool, moist skin, clear in expression and intellect, and proceeded on to prompt recovery.

Aside from the bath the treatment was liquid diet, oil of turpentine, gtt. x, t. d., in emulsion, and whiskey, half an ounce every three hours, increasing the latter as often as a compressible pulse and loss of the muscular element of the first heart-sound indicated stimulation. About a third of the cases received no turpentine. Quinine was given to some when defervescence began, and quinine and iron were largely used during convalescence.

The histories of the two cases that died are as follows:

CASE I.—H. W., female, twenty-five years of age, married, was admitted August 30, 1891. The family history and previous personal history were good. The following facts were obtained from her husband: She had not been well since the birth of her last child, three months previously. She complained more of general weakness than of any special symptoms. A week ago she was obliged to take to bed. Since then she has had fever, some vomiting, and diarrhea. She has had two hemorrhages from the bowels. Examination showed the patient to be in stupor, from which she could not be aroused to answer questions, though she could protrude the tongue, and she took medicine and nourishment. Her position was supine, with anxious expression, somewhat restless, face flushed, tongue dry and coated, with sordes on the teeth. The abdomen showed the eruption of enteric fever, gurgling in the right iliac fossa, and tenderness was inferred from the expression when pressure was made in the same region. Temperature 104° F. She was treated by the cold pack and sponging, with free stimulation. She died the third day after admission. No autopsy.

CASE II.—P. M., male, twenty-one years of age, admitted August 31, 1891. His family and previous personal history were negative. He began to feel badly about the middle of August, with weakness, headache, pain in the back and in the bones, etc. He kept at work until August 22d, when he was obliged to take to bed. He had been working on a dredge-boat, and was laid up in a sailors' boarding-house, without any attention until he came to the hospital. On admission he complained of weakness, pains in the body, legs, and head, and diarrhea. The tongue was dry, hard, and coated; sordes were on the teeth. On examining the abdomen the characteristic eruption was found to be present. There was neither tenderness nor gurgling elicited by pressure in the right iliac fossa. The abdomen was somewhat full and tympanitic; the temperature 100°; the area of splenic dulness considerably increased. He was treated by free stimulation with whiskey, and cold baths p. r. n. He became delirious on September 2d, and remained so until he died, September 7th. Before death the temperature rose to 106.8° in the axilla. An autopsy showed extensive ulceration of the lower portion of the ileum. The mucous membrane for two inches from the ileo-cecal valve was destroyed over almost the entire circumference of the intestine, clearly showing the transverse muscular fibers. The cecum showed many ulcers. The mesenteric glands and spleen were much enlarged.

These two cases were, of course, exceedingly unfavorable for any treatment, and are samples of the class of cases that make hospital statistics so misleading as regards the efficacy of any plan of treatment on the mortality of this disease.

CLINICAL MEMORANDA.

UNIQUE CASE OF INTUSSUSCEPTION.

BY MORRIS B. MILLER, M.D.,
RESIDENT PHYSICIAN PENNSYLVANIA HOSPITAL.

THE following case of obstruction of the bowels, due to intussusception of the ileum, in which probably the whole of the invaginated portion of the bowel was discharged a week before death, presents some points of pathological interest and renders the case, on account of the rarity of similar ones, worthy of being placed on record.

The strenuous reparative efforts of nature to overcome intussusception, and its effects after the parts have become so firmly attached as to prevent reduction, were shown in this case to a remarkable degree, and the fact that death did not occur for over a month after the involution took place shows that restoration of the lumen of the bowel and consequent recovery is not impossible in these cases where the integrity of the peritoneal cavity is in any way preserved.

Mrs. E. M., aged thirty-six years, a Russian by birth, was brought to the Pennsylvania Hospital, June 1, 1891, in a condition practically of collapse, due, as it soon appeared, to some intestinal obstruction.

The following history was obtained. She was a married woman and had borne several children, the youngest being twenty-two months old; her health had always been good up to five months before admission, when she commenced to have much pain at her menstrual periods, with a scanty flow. Three weeks before her admission to the hospital she began to be constipated—not very severely at first, but during the second week her bowels were only moved once despite frequent and varied doses of purgatives. Three days before admission she commenced to have numerous bowel movements, accompanied with sharp, cutting pains in the left side of the abdomen. These pains continued

throughout the next day, and toward night she developed considerable tenesmus, with small bloody stools. On the day before admission, with the idea that it might give her relief, she took a large quantity of the juice of sauer-kraut, which increased her pain, and shortly afterward her abdomen began to assume the proportions which it had when she came under observation. During this time she had had no vomiting, but when she was brought in she had some retching, with eructations of gas.

On examination she was found to be very pale, with hands and feet cold, and with a blue, pinched, anxious expression. Her tongue was slightly coated; her pulse rapid, 128 per minute, weak, and slightly irregular; temperature 99°; respirations 48. Her decubitus was dorsal with knees drawn up, but this position was not absolute. Examination of the heart and lungs was negative. The abdomen was very much distended in a pyriform shape—with rather more distention on the left side—tympanitic throughout, and exceedingly tender, especially about the umbilicus. Vaginal examination showed the uterus to be very hard and immobile, and the pelvic floor bridged over by a hard exudate, which was especially marked toward the left side. The examination was very painful. Rectal examination revealed nothing.

The treatment was stimulation, with small doses of anodyne for the pain, calomel in small doses, and turpentine stupes locally. The means employed to relieve the obstruction and the tympany were the usual ones of high enemata—soap and water, and oil—and the rectal tube, but all were without avail. Her diet was restricted to peptonized milk given often and in small quantities.

The next day her condition was better, the tympany was not so marked, her pulse was of better character, and generally she seemed improved. However, at this time there commenced a symptom which continued with a greater or less severity throughout her entire illness, viz., diarrhea, which was evidently one of irritation, the stools being numerous—as many as twenty-four in the day—small, very offensive, and of a thin pea-soup character both in color and consistency.

From the 2d to the 5th she seemed to slowly improve; her temperature remained between 99° and 100°, her pulse about 96 and of good volume, her respirations approximated 30 per minute, and pain became a much less prominent symptom. However, the abdominal distention remained and the diarrhea was still pronounced.

On the 6th it was noted that to the left and below the horizontal line of the umbilicus there was a region irregular in shape, extending downward to Poupart's ligament, over which there was more tenderness, more resistance to the hand, and having a rather lower percussion note than the rest of the abdomen.

Stimulation was reduced at this time and the calomel stopped. Efforts were made to check the diarrhea, but it continued despite all treatment, and in fact it seemed that such medication acted unfavorably on her general condition. An exploratory laparotomy was suggested, but the advice of the surgeons called in was that medical treatment could probably be continued further with greater advantage.

On the 12th it was noted that the woman's condition was distinctly worse; she had commenced to have night-sweats, she had wasted considerably, and the involved area had become more apparent and had greater resistance. Stimulation was increased and anodynes became again necessary on account of increased pain, but by the 14th she had once again improved, and it seemed as though recovery was possible.

The evening of the 15th she had much more pain coincident with an elevation of temperature of 102°, and late at night she had a large, loose movement, which contained a stringy, shreddy piece of the small intestine *twenty-seven* inches in length. This piece was an intact cylinder at one end, but much torn at the other. On holding it to the light the muscular striæ together with some of the intestinal glands could be well seen, but the mucous surface was macerated off in the greater part. The peritoneal surface showed slight flakes of lymph, but there were no evidences of peritoneal adhesions having been formed.

The next morning the woman was much weaker and seemed exhausted, but her temperature had dropped to 98.8°. The belly was much more tympanitic than before, and occasional hiccough was present.

On the 17th she passed two more pieces of bowel of the same character—one was two inches in length, the other four—and again on the 18th, a single piece of twenty-one inches, in which distinct Peyerian patches could be seen.

From this time until the 20th, when she was removed from the hospital, against our advice, by her densely ignorant husband, she grew slowly weaker, but in other respects her symptoms were unchanged.

Her death occurred five days after her discharge, and fortunately an autopsy was secured. The notes that follow render the report complete.

Post-mortem, made twenty-four hours after death: Rigor mortis firm. Upon opening the abdomen the omentum was found adherent by comparatively recent lymph to the abdominal wall to the left of the median line and below the horizontal line of the umbilicus. Upon separating this with the finger, a large cavity was opened, which evidently had recently contained pus or feces. This pocket was formed by layers of the omentum and adhesions between the coils of the intestine, and was at least two inches by seven in size. Further examination found the small intestine—evidently the ileum—considerably congested and adherent to the neighboring coils. While endeavoring to discover the position that had been the seat of the invagination, feces began to flow into the abdominal cavity and masked the appearance of the parts so that the exact location could not be determined. The cecum and the appendix were normal, as also were the ileo-cecal valve and the adjacent portion of the ileum. The colon, ascending and descending, was normal. The uterus was bound down by old inflammatory lymph and could be separated only with difficulty. After considerable research the left ovary was found; it was of normal size, but on section contained pus. The Fallopian tubes were so matted down that they could not be examined.

The examination was conducted under great difficulties, on Front Street, near Bainbridge, in a miserable

hovel, without proper light, and with the woman's husband and other relatives watching that nothing was removed.

The microscopical examination of the pieces of the bowel which were passed before death showed conclusively that they were portions of the ileum. These pieces, which have been preserved in the museum of the hospital, measured in the aggregate fifty-four inches.

I am much indebted to Dr. Morris J. Lewis, who was at the time the visiting physician to the hospital, for his kind permission to publish this case.

DEATH FROM PNEUMOTHORAX FOLLOWING ABORTION.

BY ALLEN A. JONES, M.D.,
INSTRUCTOR IN PRACTICE, MEDICAL DEPARTMENT, UNIVERSITY OF BUFFALO.

ON November 7th, a woman was brought to the General Hospital suffering from intense dyspnea, with pallor, slight cyanosis, rapid, feeble pulse, subnormal temperature, and giving evidence in every way of shock. It was hard to obtain a satisfactory history, and only in a vague way we ascertained that a few days previously the patient had had an abortion, followed by chills and fever. It was said that she had been treated for intermittent fever; however that may be, her condition was certainly alarming on her admission to the hospital, and Dr. Stockton at once set about ascertaining the cause of her extreme dyspnea. A physical examination soon confirmed the existence of pneumothorax of the right side. A moderate-sized needle was plunged into the pleural cavity, and by the aid of the Allen pump a steady volume of air was withdrawn. But in spite of our best efforts the patient received no relief, and died a few hours later.

The autopsy, by Dr. Bergtold, showed a large, well-developed woman, about thirty-three years of age, with a heavy layer of adipose. Rigor mortis was present.

The right pleural cavity was full of air, and there was a very foul odor upon opening the right chest. Two openings were found at the anterior edge of the middle lobe of the right lung, at which point rupture of a small abscess, near the surface of the lung, had occurred, rendering patent two small air-tubes, over which a portion of exudate acted as a valve, preventing any return of air from the pleural cavity. The right pleural surface was covered with inflammatory lymph; there was a small quantity of pus in the meshes of lymph about the seat of the rupture. There was collapse of the right lung, with complete atelectasis of the upper lobe. There were no large abscesses. There were evidences of recent acute bronchitis.

In the left lung small hemorrhages were scattered all over its surface, with slight edema of the lower lobe, and a small infarct in the posterior portion of the lower lobe.

There were about four ounces of fluid in the pericardial sac. The heart weighed about eleven ounces. The left ventricle was empty, and the right ventricle contained a recent clot. The aortic and pulmonary valves were competent; the right and left hearts and the aorta were normal.

There was localized pigmentation of the peritoneum. The spleen was large and soft, and, on removal, parts of its surface tore away. The gall-bladder contained about one hundred gall-stones, varying from the size of a pin-head to that of a hickory-nut. The right kidney was pale, the capsule adherent, with scars, the cortex narrow. The evidence seemed to establish an acute nephritis, superimposed upon a chronic nephritis. The left kidney was large, the capsule slightly adherent, its surface pale and injected, the cortex narrow.

The serous surfaces of the ovaries showed injection and pigmentation; the organs were of normal size. The uterus was slightly enlarged, its surface injected. The endometrium was acutely inflamed, and lined by decomposing pus and detritus. In the right uterine vein a large septic thrombus extended from the uterus the whole length of the vein, and entered the ascending vena cava for about an inch. The stomach, intestines, and pancreas seemed normal.

This case is especially interesting as one of those rare instances of sudden death from an affection of an organ most remote from the seat of primary disease. There can be no doubt that a fragment of the septic thrombus found in the uterine vein and vena cava was carried to the right heart and thence to the lung, where it set up localized suppuration, which, in turn, resulted in the destruction of the termini of the two small bronchi found patulous, so that the air was thus suddenly thrown into the pleural cavity.

Perhaps more might have been accomplished by freely opening the pleural cavity, as in Estlander's operation, but I doubt the probability of any measure saving this patient's life, when we consider the profound septicemia from which she evidently suffered.

This case preaches an eloquent sermon to those at all inclined to be negligent in the proper after-treatment of abortion.

CHLOROFORM-POISONING.

BY W. A. DEWOLF SMITH, M.D.,
SURGEON TO THE BRITISH COLUMBIA PENITENTIARY; VICE-PRESIDENT B. C. MEDICAL COUNCIL, NEW WESTMINSTER, B. C.

ON the night of the 4th of March, 1891, I was by telephone requested to see a woman at the police-station, the officer on duty informing me that the woman had poisoned herself. When I arrived at the station I found the woman in a semi-conscious condition, sitting on a bench, being supported in that position by the officer who had brought her in. I was informed that she was supposed to have taken a dose of chloroform, with suicidal intent. I at once caused her head to be lowered, and loosened her corsets and other garments. She was at this time quite unconscious, the breathing slow but shallow, the pulse rapid and weak. The conjunctivæ were insensitive. Having no stomach-pump at hand, I injected hypodermatically one-third grain of pilocarpine, which in a few minutes produced emesis. There was a very strong odor of chloroform in the vomit. After the emetic had acted the pulse slowly began to improve, and as she could not swallow I at intervals injected hypodermatically six or eight drams of brandy. She was now laid on a bed, and as she apparently felt chilly, was well wrapped up in blankets and let alone. In about two hours she began to recover consciousness, and was soon able to tell that she had had an ounce-bottle of chloroform, and desiring

to end her life had taken some of it, she did not know how much. She had been able to walk about the streets for an hour, when she was found by the officer, leaning against a building, her knees hardly able to support her. With his assistance, however, she walked to the station, and there fell into the unconscious state.

Judging by reports in the medical journals that I have at my command, poisoning by chloroform is comparatively rare, and death from it seems rarer still. In some cases respiration has had to be kept up, or stimulated, by electricity or other means, but in this case the breathing, although shallow for a time, never showed any tendency to stop.

A remarkable point in this case is the length of time the woman was able to walk about after the chloroform was taken. In another case[1] it is recorded: "T. D., aged sixty, took about half an ounce of chloroform, mistaking it for spiritus chloroformi. I was called about ten minutes after, and found him nearly insensible; five or six minutes later he was perfectly unconscious." In another case,[2] a man is said to have walked 250 yards, and was soon after found unconscious in his bedroom, after having swallowed two ounces of the drug. In this case the quantity swallowed did not exceed one ounce, but the distance walked by the woman was nearly a mile, besides which she went over part of the distance two or three times. It is difficult to determine the fatal dose of chloroform, for one dram is said to have caused death in a child,[3] and Dr. Saunders[4] mentions a case in a man that was fatal in thirty-six hours after one ounce, and one which was fatal in forty-eight hours after six ounces

ARTIFICIAL EYES INSERTED WITHIN A WEEK AFTER ENUCLEATION.

BY GEORGE M. GOULD, M.D.,
OPHTHALMOLOGIST TO THE PHILADELPHIA HOSPITAL, PHILADELPHIA.

IT is commonly advised that artificial eyes should not be prescribed until three or more months after enucleation have passed. This period is a sore one for most patients, the appearance of the empty socket or the "black blinder" being equally unpleasant both to the patient and to his friends. Relying on the well-known tolerance of the orbit for foreign bodies, I have in three instances advised the insertion of the shell within a week—once on the fifth day and twice on the sixth. In another case it was put in on the tenth day. All wore the artificial eyes from the first, not only with no inconvenience or bad results, but with entire satisfaction and comfort.

MEDICAL PROGRESS.

Pancreatic Diabetes.—DOMINICIS (*Münchener medicin. Wochenschr.*, October 13 and 20, 1891) has conducted a series of experimental investigations, the results of which lead him to conclude that, as a result of destructive disease of the pancreas, there develops a grave form of diabetes, of which the characteristic feature is not glycosuria, but a progressively fatal marasmus. This form of diabetes is considered a constitutional derangement of nutrition, attended with increased tissue-metamorphosis, and dependent upon the removal of influences inherent in the pancreatic secretion.

Conjoined Administration of Potassic Iodide and Insufflation of Calomel.—KANASUGI (*Berlin. klin. Wochen.*, September 7, 1891) has reported a case of syphilitic laryngitis in which the conjoined internal administration of potassic iodide and insufflation of calomel were followed by acute laryngitis, with edema, dyspnea, hoarseness, and pain. It has been known that calomel, dusted on the conjunctiva in course of the administration of potassic iodide, occasions conjunctivitis. It is conceived that the action is dependent upon the local formation of an iodide of mercury.

The Sequelæ of Influenza.—In the course of a series of lectures at Gresham College, THOMPSON (*British Medical Journal*, October 24, 1891) called attention to the pulmonary and nervous sequelæ of influenza. The asthenic, suppurative pneumonia and pleurisy—types that ordinarily appeared only in broken-down constitutions—afforded strong evidence of the depressing influence of the disease. It was maintained that there was a sharp contrast between the nervous sequelæ of influenza and those of diphtheria. In diphtheria the paralysis was motor; in influenza it was essentially sensory. The gastric complications that, with the pulmonary, were so fatal in the latter part of the epidemic, were referred to the nervous system, as were also the cardiac complications. The especial frequency of symptoms referable to the lungs, stomach, and heart suggested the action of a toxic agent upon the pneumogastric nerve.

A Case of Extensive Syphilitic Endarteritis.—KAUDERS (*Wiener klin. Wochenschr.*, No. 42, 1891) has reported the case of a man, thirty-five years old, with a specific history of six years' standing, who presented symptoms of mental confusion, vertigo, and failing memory; especially was the memory of recent events impaired. The right upper and the left lower extremity were enfeebled and slightly wasted. For six months there had been no radial pulse at the right wrist, the vessel being replaced by a firm cord. Speech was slow, hesitant, and slightly ataxic. The tendon-reflexes were exaggerated; sensibility was unimpaired. Seven weeks after first coming under observation, the man suddenly lost consciousness, with the restoration of which it was observed that right hemiplegia and aphasia existed. At this time it was noticed that the terminal phalanx of the great toe of the left foot was mortifying. Sixteen weeks subsequently the man died, the urine having been diminished, together with the presence of a considerable quantity of albumin and of granular and blood casts. At the autopsy an area of softening was found in the left temporal lobe, while the artery of the fossa of Sylvius was occupied by a loose, yellowish-brown thrombus. The wall of the vessel was thickened and vitreous, but the lumen of the vessel was not narrowed. The remaining vessels of the base and convexity were normal. The basal ganglia of the left hemisphere were softened. The heart was small and atrophic; its valves were normal. The intima of the ascending aorta was greatly thickened,

[1] H. J. Saunders: Canada Lancet, February, 1874, p. 209.
[2] J. G. U. West: Lancet, 1886, vol. ii, p. 13.
[3] Guy and Ferrier. [4] Loc. cit.

uneven, not fatty, calcareous, or ulcerated. The orifices of the coronary valves were narrowed. The upper half of the spleen was broken down into a cavity containing fluid and necrotic tissue; the lumen of the arterial branch passing to this portion of the organ was closed by enormous thickening of the intima of the vessel. The intima of the splenic artery and of its other branches was thickened, but in slighter degree. The right kidney was one-fifth of its normal size; its surface was irregular and nodular, and marked by atrophic cicatrices; the renal artery and its branches were greatly thickened and their lumen narrowed. The left kidney was of normal size, but deformed by cicatricial contraction. The right femoral vein was occluded by a yellow, softened thrombus, which extended into the inferior cava. The left femoral artery and the brachial, with their branches, were diminished in capacity by thickening of their intima; as were also the right femoral and the left brachial, though in minor degree.

Diplakusis.—Before the Berlin Society for Internal Medicine, TREITEL (*Berliner klinische Wochenschr.*, October 19, 1891,) described as diplakusis a condition in which sounds are heard differently with both ears. Two forms are recognized: diplakusis binauralis and diplakusis echotica. In the former, music, or tones, or voices are heard more distinctly with one ear than with the healthy ear, or apparently louder than they really are. The condition is commonly associated with disease of the ear. In diplakusis echotica, however, speech also is heard double. The difference between the true sound and the false sound is not always alike. It may vary in the same person, even in the course of a day. The derangement is not organic, but functional. In one of two cases the condition developed from use of the telephone; in the other, after rupture of the tympanic membrane. It is thought to be dependent upon fatigue consequent upon abnormal stimulation of the auditory muscular apparatus.

Meriatchenje is the name applied by TOKARSKI to a condition observed in Siberia, in which individuals without other abnormality involuntarily perform senseless, sometimes criminal acts, spontaneously or in obedience to commands from others, or repeat words or actions that they hear or see. In one case, the condition had existed for thirty years in a woman seventy years old, following a fall from a horse, with loss of consciousness. In a second case, in a woman thirty years old, the condition had existed for two years, since the death of her husband. In four other cases there was an irresistible tendency to imitation, induced by anger or fright. The disease affects principally the natives of eastern Siberia, but Russian immigrants do not escape. It has occasionally been observed to be epidemic. The maladies described by voyagers to Java, Singapore, and North America as lata, sapitlakar, and the jumping disease, appear to be identical with meriatchenje, the identity of which with tic convulsif, however, is disputed.—*Revue de l'Hypnotism* (*La Méd. Mod.*, No. 35, 1891).

Successful Laparotomy for Traumatic Rupture of the Small Intestine.—At a meeting of the Royal Society of Physicians of Vienna, JAHODA (*Wiener medizin. Presse*, No, 43, 1891) reported two cases of traumatic rupture of the small intestine successfully treated by laparotomy. In both a blow upon the abdomen was followed by symptoms of internal incarceration. In one case laparotomy was performed eighty hours, in the other twenty-five hours after the accident. In both, a brownish fluid was found in the abdominal cavity; the small intestines were agglutinated by fibrino-purulent adhesions; and in a loop of bowel, at the free surface opposite the attachment of the mesentery, there was a perforation. Lembert sutures were introduced, the deposits gently removed, the abdominal cavity irrigated with a one-tenth per cent. solution of salicylic acid, graduated suture of the abdominal walls performed, and drainage provided for. In one case, union took place by first intention; in the other the lower portion of the wound failed to unite primarily.

Dermoid Cyst of the Bladder.—REHM (*Wiener medizin. Presse*, No. 43, 1891) has reported the case of a man who presented the symptoms of imperfect evacuation of the contents of the bladder. The urine was normal; the left lobe of the prostate was apparently enlarged. The patient was instructed in the employment of the catheter and was sent home. A few weeks subsequently he again presented himself with the symptoms of a putrid cystitis. Examination disclosed the existence of a false passage in the membranous urethra, and thrombosis of the left femoral vein. The enlarged lobe of the prostate was sensitive. Irrigation of the bladder and drainage by perineal section failed to relieve the man's condition, so that as a last resort the bladder was entered from above the pubes. The mucous membrane was lined by phosphatic deposits. Posteriorly to the entrance of the left ureter there was a flat tumor, of the form of a cock's comb, that bled readily. Close behind the tumor there was a diverticulum occupied by a cyst that contained decomposing atheromatous matter and hairs. The cyst was removed and the man ultimately recovered.

A Sign of Pleural Effusion.—At a recent meeting of the Medical Society of Lyons, COIRAT (*Wiener medizin. Presse*, No. 41, 1891, p. 1557) reported a case of hydrothorax in a child, of which the only evidence was an absence of the breath-sounds. By compression of the base of the thorax, egophony was elicited, disappearing with the removal of the pressure. In cases of slight pleural effusion in children, except when the fluid is encapsulated, the level at which egophony is heard may be altered by moderate compression of the chest.

Celluloid Plates in the Closure of Trephine Openings.—At a recent meeting of the Royal Society of Physicians of Vienna, FILLENBAUM (*Wiener medizin. Presse*, No. 43, 1891) presented a soldier in whom a celluloid plate was used to close the opening made in trephining on account of a complicated fracture of the skull. The wound healed without suppuration. The case was the fifth of its kind thus treated.

BILLROTH added that he had at his clinic satisfactorily treated a considerable number of cases in the manner indicated. The hopes from this method in cases of traumatic epilepsy were, however, not realized.

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A GREAT MEDICAL DISCOVERY IGNORED.

THERE are few medical truths that have been discovered fraught with more possible and incalculable good to humanity than one that is ignored by the great body of the medical profession.

There are explanations and sufficient reasons for this anomalous fact. Among them may be noted these:

1. The discovery has come about slowly and silently. It has been made by no one man and has come with no flourish of international congressional trumpeters. So softly and slowly has it crept into scientific medicine that its own advocates are but half aware of it, and do not yet realize its almost unparalleled value.

2. It is a therapeutic measure that depends for its exercise upon an exactness of knowledge of delicate mysterious physiological and psychological functions that few possess, and upon a subtle discrimination and judgment with which, by character or education, few are endowed.

3. It has the misfortune to depend for its promulgation and practical application upon the specialist, and almost upon the specialist of a specialty—and this in a profession and in an epoch in which it is fashionable to sneer at specialism, and at the specialist who dares plead for the truth he knows—and that, at first at least, only he can know.

4. The tradition and habit and ambition of the ophthalmic specialist is to treat diseases—inflammations—or to perform operations upon the eye. The truth is that refraction-work has come into tremendous importance, and must make up nine-tenths of the routine practice of the future ophthalmologist.

Is it an exaggeration to say that the chief complaints of fully one-half of the patients that apply to the family physician, are of headache and digestional affections? Is it another exaggeration to say that fully one-half fail to get permanent relief?

Is it again an exaggeration to say that from these causes a large proportion of women have hopelessly resigned themselves to a lifetime of wretchedness?

The oculist daily has patients who have spent (to them) fortunes paying physicians and druggists; who have taken everything and done everything for ten, twenty, or thirty years, to get relief from wretchedness beyond description. No physician ever said "eyes" to them. Yet a pair of glasses relieving the compound hyperopic, perhaps unsymmetrical, astigmatism and anisometropia, give relief as if by magic.

If these things are true to anything like the extent contended for, the general standard of health is being distinctly lowered and the average vitality of the race lessened by a cause that so generally and so profoundly affects its mothers for evil. Headache—deranged function of the organ that controls vital function—and digestional abnormality—nutrition being the very source of vital power—have an evil significance impossible of over-valuation.

For twenty years the ophthalmologists have been tirelessly preaching that eye-strain due to refraction errors is the chief causational factor in the production of headache. This is a truth, and yet the truth is ignored the world over. In Europe it is hardly suspected, commonly scouted, and, so far as therapeutic application is concerned, hardly dreamed of. It is only in the United States, and even here only in one or two cities, that the truth has a comparatively adequate application. To the great majority of those of the country who are suffering from ametropically-caused disease, no word has come as to the origin of their trouble.

But this, as regards headache alone, is only half of the truth. Wherever there is headache there is nutritional disturbance. In rare cases there may be a digestional reflex neurosis without headache

and due to ocular irritation. Usually the headache precedes or accompanies. Hence it is that the full power of eye-strain to work disaster will never be realized until there is a general recognition on the part of the profession that anorexia, dyspepsia, and constipation are very, very frequently due directly to eye-strain. It is perfectly useless to sneer at hobby-riding. The sneer will not alter the fact or relieve the patient. It were better and more scientific to test the theory with a mind free of prejudice. One little proof is ready to hand: let the sneerer put on a pair of spectacles such as every oculist applies every day to correct ametropia. At most it will take but a few hours for the artificial ametropia thus produced to bring on headache, and not only anorexia, but probably vomiting. There is one other test, easily applied: paralyze the accommodation for a week or two in a young patient suffering from *possible* reflex ocular neuroses. The frequent relief will be a striking lesson in differential diagnostication.

Sick-headache, from which thousands in every community are sufferers, is usually if not always due to eye-strain, and, unless of life-long duration, is quickly curable by a pair of proper spectacles.

Anemia is, perhaps, most frequently due to the ocular irritation of uncorrected ametropia, followed by nutritional disturbance. Many cases of hysteria have the same etiology.

But possibly the worst result of eye-strain is the generally impaired nutrition, the "nervousness," the neurasthenia, the reduced vitality that so far lessens resisting power as to make the system incapable of withstanding infectious disease or exceptional strain of any type. Eye-strain is a common and great soil-exhauster for the in-rooting of a prolific crop of the weeds of general disease.

The "nervous" origin of disease is a fact becoming more recognized every day. If diabetes and albuminuria, as contended, may be of nervous origin, then diabetes, etc., may possibly be due to ametropia. Functional heart trouble, temporary anesthesia, and paralyses, localized pain, etc., may be caused by a deranged reflex from a morbid peripheral stimulus, such as that of the eye. Functional disease is the forerunner almost always of organic disease—the two are stages or phases of the same fact. Desire and physiological habit produce organs. Unhygienic habit and abnormal function wreck organs.

"But we cure headache, sick-headache, giddiness, anemia, and abnormalism of digestion by drugs alone, and every day." Willingly granted! because these affections are often, and perhaps generally, due to other than ocular causes. And more than this, powerful tonics may sometimes relieve, even when the neurosis is of ocular origin. It is an undeniable fact that some cures may be effected without touching the final and veritable causes of the disease. In stopping the one result of a reflex ocular neurosis by powerful drug-action, the reflex may be shunted elsewhere, or more probably the evil effect of forcing ametropic eyes to continue their work without correcting lenses will be to produce the local ocular evils of blunted retinal sensibility (amblyopia), ametropic choroido-retinitis, imbalance of the muscles (heterophoria), conjunctivitis, cataract, etc.

The cause of so much eye-trouble in modern life? A perfectly evident one: The eye in the animal world and in the human organism up to the present century was developed in response to definite need, that of the clearest possible distant vision. Civilization, demanding close and continued near vision, with its printing and writing and schools and commercialism, its indoor and urban life—all this is a thing of the past few dozen years. An organ produced by millions of years of reaction and habit cannot, without harm and injury, be forced in a hundred to a different usage. The tremendous importance of the eye to the organism makes Nature, with her subtle, wonderful wisdom, turn the irritational eye-strain reflex to brain or nutritive system—anywhere but to the all-important eye!—and hence it is that the eye does not feel pain, but other organs do. Inhibited reflexes produce general hyperesthesia, vertigo, and headache; switched reflexes produce neuralgia, anorexia, car-sickness, etc.

There is one other manner in which civilization may act upon the eye: the intense labor to which it puts the eye brings ocular irritation and congestion, with varying tension, that undoubtedly produce or help to produce corneal asymmetry or astigmatism, the great agent of eye-strain. The necessity for accurate vision, the slavish continuance of long ocular labor, spurs the over-sensitive ciliary muscle and nerve-centers to extraordinary exertion and, each aiding other, the vicious cycle is complete. The hyperesthetic sensibilities, the headaches, night-terrors, and anorexia of pale, early-forced, book-fed school children, are the inevitable product of far-sighted astigmatism and short-sighted ambition. The brain is forced to unwonted tasks with imperfect ocular means. A discriminating

physiologist sees that the eye is an organ fearfully overworked, bound up most intimately with every mental and physical act, most indescribably delicate in adjustment and function, and responding to a stimulus millions and millions of times more swift and more infinitesimally small than that of any other sense-mechanism of the body.

Psychologically, character and calling in life have doubtless often been changed and determined by ocular irritation. It is a truism that the disposition is entirely changed by it. The mind is almost the sole product of the function of vision, all thinking being in pictures, the very letters of the alphabet being conventionalized pictures. American morbid restlessness and hyperesthesia may to some extent be due to ocular irritation.

The practical lesson of it all is (so subtle are these beginnings and causes of evil) that every child, well or not well, should have its eyes examined to see if possible or unsuspected abnormity of the refraction exists. Especially is the possibility of an ocular origin to be suspected in all cases of mal-assimilation not clearly traceable to other causes, in all cases of headache, neuralgia, chorea, nightmare, insomnia, etc.

With this proviso and condition: That the ophthalmologist have been thoroughly trained in the very modern science and art of refraction, that a mydriatic be used, and that the refractive error be patiently and accurately worked out, not with the ophthalmoscope, but with the test-lenses, and worked out to a quarter or even to an eighth of a diopter, and that a painstaking optician fit and adjust accurately-made lenses. It is also necessary that spectacles be readjusted monthly so that they shall be kept with mathematical precision in their proper position before the eye.

CAUTION AS TO TURKISH BATHS.

A FEW weeks ago a young man died in convulsions in the hot-room of a Turkish bathing establishment in New York city, and last week another sudden death occurred just as the bather came from the plunge-bath. It therefore becomes a pertinent question if this form of bath may be attended with dangers, and should be surrounded with safeguards. It may be that in these cases the deaths were only indirectly or not at all due to the baths, but it cannot be denied that there is usually too injudicious and indiscriminate use of these baths on the part of the public and too much carelessness on the part of the attendants. As the business is commonly carried on, any person, well or ill, may take a bath, and may stay in the hot-rooms as long as he pleases. Very often the attendants are entirely oblivious of the bather's condition, or as to the length of his stay in the superheated apartment, because they have quite enough to do to care for each bather as he presents himself. Each bather is supposed to govern his actions according to his own private judgment. There can be little doubt that in certain forms of cardiac, arterial, and cerebral disease the bather should act only upon the advice of his physician, and there can also be little doubt that every bathing establishment should see that supervision and guidance are exercised over the bathers. The pulse-rate is immensely quickened in the hot air, and a too protracted stay has probably in many cases proved injurious.

The Turkish and Russian baths are largely supported by those prone to an excess of adipose tissue, in the belief that the bath serves to check or to lessen fleshiness. But without rigid attention to other factors, and without intelligent medical advice, the bath will have no such influence. The jockies that stay in the bath continuously for days, thereby reducing their weight five or six pounds a day, are quite as careful as regards diet, and they very speedily regain their former weight when "the races" have been run.

These baths are excellent therapeutic and hygienic agents, but their use or avoidance should be guided by professional advice, and with more discrimination than is usual; whilst on the part of attendants there should be a more watchful and intelligent supervision and guidance exercised over the bathers.

CARPETS AND INFECTION.

IN the wonderful progress in the science and practice of hygiene that has come about during the last ten years, it seems strange that so little attention has been directed to carpets—an evil of which the effects can only be serious and extensive.

Not many years ago it was the pride of hospital-managers to adorn their wards with pictures, curtains, carpets, and every device of ornament now condemned; but the teachings of bacteriology so speedily made it clear how and to what extent danger lurks in beauty of this kind, that hospital-ornamentation is now a thing of the past. What is true of hospitals is certainly true, though to less extent, of the home. We know that every nook

and corner not readily reached in the daily or frequent dustings is a nidus for the lodgment, growth, and development of disease-germs, and perfect sanitation would require the reduction of these *ad minimum*.

Of all such depositories, none can be more productive of harm than carpets. Here is an excellent bed for the breeding of germs, and in the case of fluids, as, *e. g.*, expectoration, for their subsequent drying and dissemination as dust. The very warmth that commends the use of carpets is a potent factor in the preservation and multiplication of the bacterium.

This is but one aspect of the question, though a serious one. Carpets are answerable for yet other evils. Originally devised, no doubt, as much for warmth as for ornamentation, they have come to take the place of that solidity of structure that alone can secure healthful warmth. The flimsy, poorly-joined floors and doors of modern dwelling-houses make carpets a necessity for barest comfort, and have been made endurable only because of these defects. This is the serious aspect of the question in point of remedy. An uncarpeted floor means draughts, cold, and every circumstance of discomfort; and until houses are better built, no matter what elaboration of painting, staining, or polishing is bestowed upon the floors, their imperfections of structure would still make rugs or carpets a necessity.

We are not aware of any statistics to prove the unhealthfulness of carpeting, nor is it plain in what way reliable data could be obtained; yet we are none the less convinced that carpets exert an evil influence, especially in the propagation of our dreadest scourge, tuberculosis. That the sputum of phthisical persons may be dried, preserved, and disseminated in the dust of the room is a proposition that in the present state of our knowledge needs only to be stated to be believed. How often this has happened—indeed, is happening every day—and how often such infections pass for cases of family tendency and the like can only be surmised, but there can be little doubt that theory and fact are in close accord.

What can be done to remove this evil? Little, we confess; nothing without scientific agitation of the matter. Perhaps a radical cure is not to be expected, but a compromise may be effected. The necessities of our domestic architecture, the warmth insured, and the quiet that carpets secure, will effectually prevent any attempt at removal; but the same objects may be obtained from small rugs, which can be frequently dusted and at somewhat longer intervals taken to the cleaners for thorough steaming. Large carpets fastened to the floor, and to a less extent large rugs, not easily taken up for dusting, should be condemned.

A general spread of knowledge concerning the growth and diffusion of microörganisms will do much to secure the needed reform, but until public attention and fear are aroused nothing can be done.

CORRESPONDENCE.

"SENDING INVALIDS AWAY FROM HOME."

To the Editor of THE MEDICAL NEWS,

SIR: After reading Dr. Rogers's communication on "Sending Invalids Away from Home," in THE NEWS, I feel it my duty to indorse his views, and to add a word or two myself. The study of climatology and the selection of sanitaria are of great importance to the physician; but, unfortunately, they usually receive but little attention from the practitioner. How often is the advanced invalid sent far away from home, and from all that is dear to him, to be surrounded by strange sights and faces, in a strange land, whither he has been sent by a physician who had not taken the trouble to look sufficiently into the matter to qualify himself to decide the important question as to which particular climate or locality was most suitable for his patient's case.

In a paper that I read before the Philadelphia County Medical Society (February 24, 1886) there appears the following paragraph, which is so apropos that I quote it here: "How often have I met cases of advanced phthisis away from all the comforts of home and its surroundings, dying in a strange land, sustained only by hope and the fact that they were carrying out the physician's order. I wish that my words could only be made sufficiently impressive to picture to you as the subject comes up before me the many sad cases I have witnessed. It is easy for the doctor, who possibly knows that all hope is ended, and a fatal termination not very far distant, to say to his patient, Go to Algiers, go to Egypt, Australia, or Southern California. The poor unfortunate patient is at once inspired with hope; his weakened frame is sustained by the nervous energy which is brought by determination. The long journey before him is no obstacle; its discomforts are discounted, and yet he scarcely reaches his destination before nature gives way. The journey to a foreign land requires a degree of strength that is often surprising even to a man in good health. The wear and tear, the vicissitudes of temperature, the character of the cooking, the damp sheets and hard beds, are much more wearing than most of us imagine. Our Consul-General to Egypt some years ago told me that much of the business of the consulate was the caring for the baggage of the consumptives who had been sent from home in the last stages of the disease, to run down more rapidly, and

possibly die within two or three weeks of their arrival." One of the most shocking sights to the invalid travelling south is to run across the boxes with the death-certificates upon them, waiting for the northern trains. Although I have the greatest possible faith in change of air and residence in a suitable climate for those in the early stages of disease, or when a predisposition exists, or during convalescence, I am strongly opposed to the method at present adopted of recommending places in a general way, regardless of their suitability and other matters as important as the climate itself. A physician should know thoroughly the place to which he sends his patient. He should be as familiar with it as with the drugs he orders in his prescription.

Patients should be sent away in the early stages of their malady. They should remain away long enough to eradicate all traces of the disease that caused them to seek an equable climate, and, if their home is in the Middle, Eastern, or New England States, they should not return until summer has begun.

A three years' residence in Southern California has convinced me that patients must come early in their disease and remain long, otherwise their trip will prove futile, if not fatal. WILLIAM A. EDWARDS, M. D.

SAN DIEGO, CALIFORNIA.

A RATIONAL MEDICAL NOMENCLATURE.

To the Editor of THE MEDICAL NEWS,

SIR: In an editorial in THE MEDICAL NEWS of October 24, 1891, you refer to the importance of employing names descriptive of objects indicated, discountenancing the use of proper names. This evidently is the correct view to take. The sooner we change the course of this evil tendency the better. If the present mode of naming diseases, instruments, operations, and drugs be continued, medical literature will become a collection of meaningless terms, unintelligible even to the most scientific reader.

In the present advanced stage of medical science, it appears to me that our nomenclature should be technical; grave errors are frequently committed by misunderstanding terms, which could be avoided by adopting a universal technical nomenclature.

The use of proper names confuses the mind, encumbers the memory, and deforms the beauty of medical literature. Proper names should be used only from a descriptive or historic standpoint.

A recent number of one of our leading medical journals contained an article on "Supra-pubic Cystotomy," which forcibly illustrates the subject in question. It was said that "a soft catherer is inserted, and the bladder filled with eight ounces of warm *Thiersch's solution*, which is allowed to flow out through the catheter. . . . If the bladder is deeply sunk in the pelvis, the *Barnes dilator* may be inserted per rectum, filled with four to five ounces of warm water. . . . The most satisfactory instrument for removing tumors of the bladder is the *Spencer Wells* ovarian sac *clamp*. . . . The *Paquelin cautery* point may now be introduced and the base of the neoplasm seared over. . . . Temporary drainage is satisfactorily secured by the *Trendelenburg T-tube*. . . . Occasionally a small fistula may persist, which will require either to be packed with iodoformized gauze or scraped out with a *Volkmann's spoon* to insure its closure."

One may affirm, without fear of being accused of exaggeration, that the value of the article from which this extract is taken is greatly impaired by the use of proper names. H. F. SLIFER, M.D.

NORTH WALES, PA.

"PULMONARY TUBERCULOSIS AND MALARIAL FEVER."

To the Editor of THE MEDICAL NEWS,

SIR: It may be a question in the minds of some medical men whether or not pulmonary tuberculosis is ever diagnosticated malarial fever by physicians within the pale of the profession. It is my impression that the mistake is quite frequently made.

While attending the International Medical Congress at Berlin, a patient in the last stage of pulmonary tuberculosis, who had been under my care, fell into the hands of a physician who diagnosticated the case as one of maarial fever, stating to the friends of the patient that he was "no death-angel," and that he would soon have the patient restored to health. Before the patient passed out of my hands there were large cavities in the apices of both lungs, and the objective symptoms were as pronounced as those described by Charles Dickens in the case of Smike: "There were times, and often too, when the sunken eye was too bright, the hollow cheek too flushed, the breath too thick and heavy in its course, the frame too feeble and exhausted, to escape regard and notice."

Notwithstanding the subjective and objective symptoms, and the fatal termination of the case, the physician believes or affects to believe that his diagnosis was correct, although "a little off" in prognosis.

Your editorial on this subject in THE MEDICAL NEWS of the 14th of November elicits the statement made above. J. F. JENKINS, M.D.

TECUMSEH, MICH., November 18, 1891.

SHOULD PHYSICIANS DISPENSE THEIR OWN MEDICINES?

To the Editor of THE MEDICAL NEWS,

SIR: Your article, "Physicians Should Dispense Their Own Medicines," will no doubt excite some discussion among physicians, and especially among pharmacists. The conscientious pharmacist cannot deny that there is a great deal in favor of this plan, although if carried out it would take the bread and butter from under his nose. At the present time every druggist must admit that cutting in prices is the increasing evil; that selling proprietary medicines at cost, and even below cost, is *indirectly* working harm to the physician as well as to his patients. Has it ever occurred to the physician that, in order to pay the large running expenses of a pharmacy in a great city, a big profit must come in somewhere? If it is not made on proprietary articles in combination with drug-trade and prescription-trade, then it must be made on the latter entirely. This intense cutting has caused unscrupulous druggists to lower their prescription rates to such an extent that in order to make any profit at all an inferior grade of drugs must be used, or an inferior class of prescription-clerks employed, and con-

sequently the life of the patient and the doctor's reputation are placed in jeopardy. It is my candid opinion that the physician whose practice is among the poorer class of people will run less risk to his reputation and put his patients in less danger by dispensing his own medicines, knowing that they are obtained from reliable laboratories; at the same time he will be striking a blow against hospital and dispensary evils and all irregular practice. Respectfully,

HENRY F. C. MÜLLER, M.D.

BROOKLYN, N. Y., November 29, 1891.

IDIOSYNCRASY.

To the Editor of THE MEDICAL NEWS,

SIR: An editorial in THE MEDICAL NEWS of November 14th impels me to record a striking instance of idiosyncrasy of which I am myself the victim. Early in my professional career, more than thirty years ago, I learned that the presence of the minutest quantity of ipecacuanha in the atmosphere was sufficient almost instantaneously to induce violent sneezing, with an attack of severe coryza, in conjunction with which asthmatic paroxysms occurred. Unwilling to surrender the use of ipecacuanha, I substituted a tincture for the powder. If in dispensing I soiled my hands with a drop or two of the tincture which I failed immediately to remove by washing, decided irritation was set up in those parts with which the soiled fingers came in contact. On each of the only occasions that I remember having taken ipecacuanha internally I suffered with excessive nausea, violent vomiting and retching, accompanied by a sense of burning pain and colic in the abdomen. In each instance I found speedy relief from the ingestion of castor oil. Yours truly,

JAMES MITCHELL, M.D.

MADISON, BOONE COUNTY, W. VA.

THE LENGTHENING OF TENDONS, ETC.

To the Editor of THE MEDICAL NEWS,

SIR: In your issue of November 28th you speak of the fact that a year ago, in ignorance of Dr. Rhoads's proposal for lengthening contracted tendons by splitting them, I published a paper describing the same operation, which was proposed to me by Dr. S. Weir Mitchell. I beg to call attention to the fact that in the *Lancet* of July 18, 1891, p. 109, Mr. Wm. Anderson, in his lectures on "Contractions of the Fingers and Toes," describes and figures precisely the same method, and he carried out the plan by operation on a young girl of seventeen, on October 18, 1889. It will be observed that while the idea seems probably to have been original with Dr. Rhoads, Mr. Anderson, and Dr. Mitchell, the first publication is certainly to be credited to Mr. Anderson. Yours, very truly,

W. W. KEEN.

NEWS ITEMS.

Dr. E. von Esmarch, son of the distinguished surgeon of Kiel, has been appointed Professor of Hygiene at Königsberg, succeeding Fränkel, who has been called to Marburg.

A new Russian Pharmacopœia is about to be published.

Gusserow recently celebrated the twenty-fifth anniversary of his accession to the chair of Gynecology at Berlin.

M. Pasteur has secured an annual subsidy from the French Government to enable poor persons living in France at a long distance from his institute to reach it in the event of their requiring his treatment.

Bamberger Fund.—The widow of the late Professor Bamberger has given a sum of eight thousand five hundred dollars, the interest of which is to be devoted for the benefit of poor, deserving students in the University of Vienna, irrespective of nationality or creed.

A Prize for African Investigations.—The King of Belgium has offered a prize of five thousand dollars, to be awarded in the year 1897, for the best presentation, from a sanitary point of view, of the meteorologic, hydrologic, and geologic conditions of equatorial Africa, together with the hygienic principles and rules to be observed in determining the mode of life, the character of nutrition, the form of occupation, the variety of clothing, and the kind of habitation. The essay must also include a consideration of the symptomatology, the etiology, and the pathology of the diseases peculiar to the country, together with the prophylactic and therapeutic measures to be adopted. Principles are to be formulated for the selection and employment of medicaments and for the establishment of hospitals and sanatoria. The investigations and the conclusions are to bear upon the conditions of life for Europeans in various parts of the Congo region. The competition is open to the world. The essays must be in the hands of the Minister of the Interior and of Public Education in Brussels by January 1, 1897.

The Adulteration of Drugs.—The Committee on Adulteration of the New York State Pharmaceutical Association recently made some investigations regarding the strength and purity of certain drugs extensively used in ordinary practice. Out of seventy-six samples of dilute acetic acid purchased in various towns between Poughkeepsie and Saratoga, only nineteen samples could be called good. The strength, which should have been 6.12 per cent., was found to vary from 0.8 to 29.8 per cent. Of forty-six specimens of Hoffmann's anodyne only five were good. Thirty prescriptions calling for stronger ether produced all sorts of make-believes; one druggist even sent a mixture of chloroform and alcohol. Only three out of fifteen samples of potassium iodide were respectable. This is heartrending. If we cannot have good iodide we might as well give up practising medicine. We think, Mr. Druggist, we shall have to come to a better understanding with you about these little matters, or else we shall have to dispense our own remedies, which custom you do not seem to approve.—*The Physician and Surgeon*, November, 1891.